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DIESEL RAILWAY TRACTION

A Supplement illustrating and describing developments in Diesel Railway Traction is presented with each copy of this week's issue.

The 40-hour Week

A REPLY has now been made by the Engineering and Allied Employers' National Federation to the application of various trade unions for the introduction of the 40-hour week in the engineering industry without loss in pay. As expected the employers have replied that the applications of the unions cannot be granted for the reason that it would necessarily add to costs, and this in its turn would add still further to unemployment, the reduction of which is the common aim both of the trade unions and the employers. We look forward to the time when unemployment is no longer regarded as the essential problem, for it is actually the resulting poverty due to lack of money which is at the root of the trouble. The absurd situation is well put in a report of the Southampton Chamber of Commerce*: "Either an unemployed person is without work because we are already producing sufficient without his services being required, in which case he is poor because there is an abundance of goods and services available; or he is in want because the available wealth is not sufficient to provide for the satisfaction of his needs, in which case it is difficult to explain away why his services are not being utilised to produce more."

* Report of the Economic Crisis Committee of the Southampton Chamber of Commerce (Inc.), June, 1933. Southampton: Blue Peter House, 8, Portland Terrace. Price 6d.

Internal Air Services

Since the inauguration of the G.W.R. air service last year, rapid strides have been made in the provision of internal air routes for both passenger and freight traffic within the British Isles, and at present there are some 2,000 route miles thus being regularly covered, in most cases daily. Considering the size of the country and the fact that most of these services were treated as experiments last year, this figure must be regarded as remarkable. However, what must be the chief concern of the railways is the likely course of future development, for, even though the railways are establishing their own airways, they cannot hope to be monopolists in the air. This latter fact is one which must be appreciated when it is realised that Railways Air Services Limited is responsible for only two of the internal routes which appear on our map on page 884. Moreover, the railway air services do not so much compete with their own railway lines as provide improvements on what in any case must prove circuitous or difficult land routes owing to the presence of intervening sea, whereas the non-railway internal air services in practically every case compete directly with an established railway route. During its infancy this competition may not be serious, but the continuous increase of air cruising speeds, which have already grown to 145 m.p.h. from 80 m.p.h. in 1919, is rapidly making internal air lines more commercially attractive.

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The Week's Traffics

Traffics of the four amalgamated companies for the past week compare with a week in 1933 when a definite improvement had set in. This had apparently not been taken into consideration by some Stock Exchange optimists and prices of stocks were affected. For the year to date the net increase in the passenger train traffics of the four companies is £62,000, in merchandise the increase is £1,879,000 in which all the companies share, and in coal the aggregate increase for the four is £876,000.

	19th Week				Inc. or dec.	
	Pass. &c.	Goods, &c.	Coal, &c.	Total.	Year to date	
	£	£	£	£	£	%
L.M.S.R. ..	+ 15,000	+ 20,000	- 2,000	+ 37,000	+ 1,121,000	+ 5·70
L.N.E.R. ..	+ 9,000	+ 28,000	+ 24,000	+ 61,000	+ 1,215,000	+ 8·53
G.W.R. ..	- 1,000	+ 8,000	- 7,000	+ 2,000	+ 338,000	+ 4·12
S.R. ..	+ 7,000	- 3,500	+ 2,500	+ 13,000	+ 143,000	+ 2·25

Mersey Railway traffics for the year to date have reached an increase of £3,600. The Great Northern of Ireland is now £142,200 to the good on the year, and the Great Southern advance for the same period is £35,126.

* * * *

Fatal Road Accidents in 1933

The report on fatal road accidents in 1933 published this week by the Ministry of Transport follows on the preliminary report issued in November last on fatal accidents occurring during the first six months of the year. In the report the circumstances in which fatal road accidents occurred are analysed in detail. The number of fatal road accidents recorded in the Home Office returns was 7,001 in 1933, as against 6,487 in 1932, 6,499 in 1931, and 7,074 in 1930, and the number of persons killed in these accidents was 7,202 in 1933, as against 6,667 in 1932, 6,691 in 1931, and 7,305 in 1930. It will be noticed that though the number of deaths in 1933 considerably exceeded those in 1931 and 1932, it was slightly below the number for 1930. Of the 1933 fatal accidents, 2,285 were collisions between moving vehicles, and 3,401 between one vehicle and a pedestrian. Sixty per cent. of the total accidents occurred in built-up areas, and nearly two-thirds in daylight. The average daily number of fatal accidents rose from 16·4 during the first six months to 19 for the

full year. Difficulty was again experienced in obtaining trustworthy evidence as to the speed of a vehicle.

* * * *

Overseas Railway Traffics

A steady improvement in the traffic earnings of the Buenos Ayres & Pacific Railway during the past fortnight, in which its receipts have increased to the extent of £21,000, has now brought its decrease for the year to date down to £35,000. At the present rate of progress this decrease should be wiped out by the end of the financial year. In the two weeks the Buenos Ayres Western has added £5,000 to its increase, and the Central Argentine has reduced its decrease by £7,000. On the other hand, the Buenos Ayres Great Southern has in the two weeks added £65,000 to its decrease. Gross earnings of the Canadian Pacific have improved during the past fortnight to the extent of £90,600, but the Bombay, Baroda & Central India has gone back slightly.

Railway.	No. of Week.	Weekly Traffics.	Increase or Decrease.	Aggregate Traffic.	Increase or Decrease.
		£	£	£	£
Buenos Ayres & Pacific	45th	137,000	+ 12,000	4,977,000	— 35,000
Buenos Ayres Great Southern ..	45th	201,000	— 27,000	9,113,000	— 118,000
Buenos Ayres Western	45th	80,000	—	3,075,000	+ 8,000
Central Argentine..	45th	192,000	+ 2,000	7,523,000	— 638,000
Canadian Pacific	18th	449,800	+ 41,600	7,799,200	+1,092,000
Bombay, Baroda & Central India	5th	173,025	+ 3,750	827,400	— 2,175

* * * *

The Towel Problem

Thousands of towels disappear annually from railway carriage lavatories. Of the measures now applied to combat this phenomenon, none appears wholly satisfactory. The practice of not providing towels at all has the merit of logic, but implies too despondent a philosophy. It also penalises the just as well as the unjust. This last objection applies to the system at present in vogue on one British railway, which supplies its patrons with towels of such modest dimensions that drying becomes an act of faith rather than friction. It is probably argued that temptation to the pilferer decreases with the area of his prospective booty, and that, if he succumbs to it, the microscopic nature of his haul allows its loss to be borne with fortitude. To chain the towel to the wall, in the manner adopted by another main line, is an act of desperation, and risks offending the hygienic majority who have no motive other than that of washing their hands. The only solution appears to be to accept the fact that the towel is as impermanent as soap and to adopt a size which, while adequate to dry the righteous, will allow those who so desire to gratify their predatory instincts without overtaxing the company's exchequer. Towel loss, in short, must be regarded as a running expense as inevitable as coal consumption.

* * * *

London Transport C Stock

As briefly indicated on page 858 of last week's issue, the London Passenger Transport Board is proposing an effective method of removing a temporary difficulty which has arisen in regard to the payment of interest on its C stock owing to certain precise requirements of the London Passenger Transport Act, 1933. By the Act the board is required to prepare and publish its annual accounts within two months of the close of its financial year on June 30, and under Ministry of Transport regulations it must pay the interest on the C stock within three months of such close. It is unlikely that the proceedings before the Arbitration Tribunal will by June 30 have reached a stage at which the compensation payable to all the independent undertakings will be finally ascertained, and certainly the completion of the pooling scheme with the main line railway companies cannot be concluded by that time. Consequently, the board will be unable to ascertain within the required period what revenue will be available for distribution on the C stock. In order to prevent an inequitable holding-up of such distribution the board has applied to Parliament for leave to introduce a late Bill to vary the terms of the 1933 Act, by extending the time within which the accounts for the first financial year must be published to the date for the preparation &c. of the accounts for its second year, and meanwhile to authorise the board to make a payment on account of the interest on the C stock for the first financial year based on available estimates, to be followed by a final adjusting payment.

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Railway Wages and Railway Revenue

In view of the prominence given to the claim for complete restoration of the cuts in railway wages which came into operation in March, 1931, it is only right that the matter should be put in its proper perspective as has been done in a recent letter by Mr. Ashley Brown, General Secretary of the British Railway Stockholders' Union. The necessity for these cuts was admitted upon the net revenue of the four group railways during 1930, which amounted to £37,716,000. In March, 1931, when the cut was made, the cost of living index was 150. The net revenue of the four groups for last year, however, was £28,804,000, or £8,912,000 less than in 1930, and £4,566,000 less than in 1931, whereas the cost of living had fallen in 1933 to 140. No argument in favour of the immediate restoration of the cuts can legitimately be based upon the partial restoration of wage cuts to civil servants sanctioned by the Budget. The Government partially restored these cuts only after the necessary surplus had been achieved. In the case of the railway industry the increased revenue has still to be earned. In the first 18 weeks of the current year the estimated increase in the gross railway traffic earnings of the four groups is not more than £2,704,000, and a considerable portion of this advance is bound to be absorbed in additional working expenses. Moreover, in the case of the Great Western, the large withdrawals from reserves in the past two years in order to maintain the 3 per cent. dividend, have to be made good.

* * * *

A Brazilian Railway Complaint

From the report on another page of the Chairman's speech at the annual meeting of the Great Western of Brazil Railway, it is evident that the adverse conditions under which the company has to work are of a severity exceptional even in these days. It is equally clear that the Brazilian Government could, if it would, do much to help, and the company's energetic representations in that quarter have justice on their side. As a shareholder forcefully expressed it, by failing to adjust the present system of tariffs the Government is forcing the railway to "carry the offal of the zone at a loss." Luxury goods go to the lorry companies, which enjoy a remarkable immunity from official supervision. Replying to the question why the railway does not institute road transport services of its own, the Chairman pointed out that even if it did so it could not hope to achieve the privileges that favour its competitors, who are untroubled by restrictions upon the hours and conditions of work of their employees. A decree to the effect that the lorry operators must in future collect the transport taxes for which they are responsible has been issued, but from the Chairman's statement that "the railway hopes it will be enforced," one is hardly reassured of the administration's good-will towards a transport service which can justly claim to have laid the foundations of the country's industrial life.

Chinese Railway Position

Chinese railway progress and finance always receive informative treatment at the annual meetings of the British & Chinese Corporation, which has large railway interests in China. Mr. D. G. M. Bernard, Acting Chairman of the Corporation, at the meeting on May 9, accordingly gave the latest available particulars, which are summarised in our news section. During the year 1933, more peaceful and stable conditions were experienced, except on the Peking—Mukden line, and some slight progress was made towards physical and financial recovery. At the same time, no interest has been received on the advances made by the corporation on account of the Nanking-Hunan Railway since 1925. As Mr. Bernard has pointed out, China's statesmen realise that an extension of the present railway system by construction of trunk lines is essential for the development of their country, and that the necessary prelude to obtaining further loans for railway development is the management of the existing railways on business lines, and their financial rehabilitation. Although the Ministry of Railways has given evidence of an earnest desire to restore confidence in China's respect for her obligations, there is still much loose handling of railway revenues, and this forms the chief obstacle to further development.

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The Railway in Abyssinia

Abyssinia is a country which has attracted attention in Europe in recent years, owing to the announcement made by the Emperor at his coronation in 1930 that he intended to grant a constitution to his people and initiate a number of reforms. Addis Abeda, a town of about 100,000 inhabitants, is the seat of government and the royal residence, and it is there also, of course, that the various embassies are to be found. At one time Gondah was the capital, and Menelik II, who ascended the throne in 1889, was accustomed to journey continuously from place to place with his court, necessitating constant travelling on the part of the ambassadors of foreign countries. The latter at length made strong representations about the inconvenience of this practice, with the result that Addis Abeda—known as Addis for short—was at length selected as the permanent court residence. The railway to it from the coast, a journey over which was described in a recent issue of *Archiv für Eisenbahnwesen*, belongs to a French concern, the Compagnie du Chemin de fer Franco-Ethiopien, whose head office is in Paris. Some brief particulars are included in our Overseas section on page 872. In 1930, the latest year for which figures are available, the traffic on the line amounted to 194,000 passenger and 89,600 tonnes of goods, conveyed in 1,333 passenger and 2,968 goods trains. The principal imports handled in the year mentioned were beers, wines, dates, rice, tobacco, petroleum, salt, building materials and motor-cars. Exports consisted of butter, wax, ivory, corn, dried vegetables, coffee and hides.

* * * *

Abyssinian Travel

The through express trains between Djibouti and Addis Abeda take one day and two nights to perform the journey and have sleeping accommodation. On Sundays, Thursdays, and Fridays there is an ordinary train, which does not travel by night, passengers staying over at Dire-Douah or Aouache; the journey in that case lasts three days and two nights. Stops of thirty minutes each are made at Modjo and Afdem for dinner in the station restaurants, the number of passengers requiring a meal being telephoned forward in due time by the guard, and an excellent variety of food and drinks is available. During the stop for meals the carriages are guarded by soldiers, and passengers can leave their belongings in the train without fear of loss. The efficient manner in which the native staff discharge their duties is worthy of praise. At one time some of the people in the districts along the line were inclined to be hostile to it and it was considered unadvisable for the trains to run at night, but this situation no longer obtains, as the natives now believe that the railway has brought real benefit to themselves. To-day they are, for the most part, a quiet people and are content with a very simple mode of living.

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Up-to-date Bridge Repairs on the L.M.S.R.

Welding is making steady progress in bridge repair work. Some of the most ambitious schemes of this sort on British railways have been carried out on the L.N.E.R. and have been described in these pages from time to time. An important undertaking which has been in progress for the past couple of years has just been completed on the L.M.S.R. The Sharnbrook viaduct, carrying the old Midland passenger lines over the River Ouse near Bedford, was built in 1881 of ten wrought iron girder spans carried on brick abutments and piers, and having a total length of 572 ft. Its floor consisted of 12 in. by 6 in. cross timbers which carried ballasted track and which was due for renewal, and the main girders themselves had worked into the bedstones to a depth of $\frac{1}{2}$-$\frac{3}{4}$ in. Further, the cross bracing connection rivets tended to work loose and required periodical attention. It was decided to replace the wooden floor by a steel plate floor stiffened by tees, to weld this on to the main girders, and to weld the cross bracings to the girders, as well as to insert new bearing plates under the latter and level them up. Thanks to the presence of the adjacent viaduct carrying the goods lines, traffic could be diverted on Sundays, thus minimising interruption of both trains and repair work. Altogether, the repairs have necessitated the use of 140 tons of new steelwork, 22,000 linear ft. of welding, mostly double-run, and 66,400 18-in. electrodes. So satisfactory and economical has the work proved that the goods viaduct is to be repaired on similar principles.

* * * *

Another Largest Locomotive

What, according to some of the daily newspapers, is the largest and most powerful, entirely unique and altogether wonderful locomotive, has again made its appearance on a British railway, following hard upon the heels of another to which the same epithets were applied. If we are to believe the railway correspondent of a well-known daily, this country has achieved the distinction of producing "the first express passenger engine of the Mikado type in the world," while, according to the same correspondent, noteworthy features in the design are the provision of "forward views on each side of the cab and an extra large boiler with great cylinder power." All this and more of the same kind refers to the new L.N.E.R. three-cylinder 2-8-2 express engine No. 2001 recently completed at the company's works at Doncaster and which in due course will be set to work in Scotland, hauling express passenger trains between Edinburgh and Aberdeen. The locomotive is of distinctive design and, as it is capable of developing a tractive effort in the neighbourhood of 44,000 lb., it certainly can be said to rank as the most powerful passenger engine as yet built for service on a British railway. It is being subjected to tests on the L.N.E.R. main line and will, we understand, be exhibited at King's Cross station towards the end of the month. On page 880 of this issue there will be found illustrations and a few outline particulars of the locomotive.

The Penny Post

THE railway companies have had the courage, and we believe wisdom, to revert substantially to the penny-a-mile rate for passenger transport, with marked effect in checking the decline in the receipts from passenger traffic. The Postmaster-General, according to the latest statement in Parliament, has not yet seen his way clear to make a similar courageous gesture in regard to the nation's postal facilities. Yet the Post Office possesses a monopoly of the postal business, which, alas, is far from being the position of the railways in the transport field.

We believe ourselves that the movement for the restoration of the penny post (in vogue in England, thanks to Rowland Hill, for nearly a century) has a very strong case. The National Committee for the Restoration of the Penny Post represents some 25,000 firms, with a total capital of more than a thousand million sterling, but we feel sure it would also have the overwhelming support of public opinion. The return to the penny post would exert a powerful influence, both psychological and practical, upon trade recovery, and its effects would be felt directly and indirectly by industry generally, including, of course, the railways. It is remarkable that, as the committee states, the Post Office has collected within the past ten years no less a sum than £80,000,000 of surplus revenue, all of which, of course, has been taken from trade and industry for the most part in years of acute depression.

If the case of the railways forms any analogy, to revert to penny postage would not necessarily reduce the postal revenue, and might very well increase it. A great deal of matter now sent at a halfpenny would probably, as the committee points out, be sent in sealed penny packets, and the great effect which the reduction would undoubtedly have on the expansion of business should more than make up any remaining deficiency. The additional stimulus would aid in the increase of trade and the further reduction of unemployment. The plain question arises, has the Post Office any right to earn a large surplus at the expense of trade and industry? The Post Office has lately seen fit to appoint an official trumpeter to announce its activities and benefits to the public, but without implying any derogation of these, on the whole, admirable efforts, we would venture to suggest to the Postmaster-General and the Government that the finest and most effective stroke of publicity which the Post Office could possibly achieve would be the restoration of the penny post.

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Some Indian Signal Statistics

AMONG the selected engineering papers accepted by the Institution of Civil Engineers, and ordered to be published without discussion, was one, No. 140, on "Signalling and Block Working in India." The author was Mr. A. H. Smyth, who began his connection with the signalling of the South Indian Railway in 1905 and eventually became its Signal and Telegraph Engineer and, in 1928, was made the Chief Transportation Superintendent. The paper is of the character that would be expected of a man who has had such signalling and operating experience, and cannot but be useful to those who are interested in the railways of India. Certain statistics as to the extent to which various means and methods of signalling are used will, however, be of service to railwaymen generally. For instance, it is recorded that 53 per cent. of the single line mileage is equipped with electric token instruments; the control of the signal for entering a single line section by the token for that section is now a Government requirement; the yellow arm and light for the "warner" signal, though permitted, has not been adopted by any railway except the Assam-Bengal; the South Indian Railway has recently completed mechanically-signalled installations at Villupuram and Trichinopoly, with 116 and 120 levers respectively, with track circuit and electrical detectors to a considerable extent. In the conclusion to the paper Mr. Smyth recommends dual directional running for double lines with heavy traffic; for lines with a diminishing traffic it is advised that they be converted to single tracks as has been done on the Great Southern Railways of Ireland. Finally the progress made during the last decade in the equipment of goods trains with continuous brakes and the adoption of electric headlights on locomotives may allow for a relaxation of the block rules for passing places on single lines so as to permit of a speeding-up of the traffic.

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Sixth Annual Review of Railway Charges

THE annual review of the standard and exceptional charges of each of the four amalgamated railway companies which the Railway Rates Tribunal proposes to hold on June 5, will be the sixth review held by that body since the revised scales of charges came into operation on January 1, 1928. This duty is placed upon the Tribunal by Section 59 (1) of the Railways Act, 1921, which directs it to review the charges of each amalgamated company at the end of each financial year, unless the Minister of Transport decides that the review need not be held. The Minister has not exercised his power to cancel his inquiry for the year 1933 and the tribunal has, therefore, called upon the railway companies to furnish detailed accounts and statements for consideration at the public hearing. Section 59 (3) of the Act directs the tribunal to compare the net revenue or average annual net revenue of each company with its standard revenue plus any allowances granted in respect of additional capital raised or provided in respect of expenditure on capital account incurred since January 1, 1928. The standard revenue of the four group companies, including allowances for capital raised or provided between January 1, 1928, and December 31, 1932, amounted to £51,117,172, and although during 1933 the net revenue of the four companies was £28,804,163, an increase of £2,378,971 over the previous year, they were still £22,313,009 short of the standard. Even if the average of the last three years is taken, there is a deficiency of £21,583,874 (excluding the allowances for additional capital claimed in respect of 1933) so that by either method of calculation the deficiency is very large.

In these circumstances the tribunal has to consider whether the deficiency is due to any lack of efficiency or economy in management of the undertakings. If it is satisfied that it does not arise from this cause, it is required, unless in its opinion through a change of circumstances the deficiency is not likely to continue, to make such modifications in the standard and exceptional charges as it considers necessary to enable the companies to earn their standard revenue and allowances. At the last review fairly detailed evidence was given on behalf of the companies of the many directions in which economy and efficiency were being pursued, and further examples were given at the annual general meetings held early this year. The financial statements furnished to the tribunal clearly indicate the result of these efforts as, while gross receipts declined by £12,750 compared with 1932, railway working expenditure was reduced by no less than £2,024,900. These figures show a distinct improvement on those for the previous year, when a drop of £12,900,000 in gross railway receipts as compared with 1931 was only partially offset by a reduction in expenditure of about £7,260,000. It can reasonably be claimed that these successive and very

large reductions in expenditure have not been achieved at the expense of efficiency, for railway operation throughout 1933 was characterised by a spirit of enterprise in many directions.

If the tribunal is satisfied that the deficiency was not due to any lack of efficiency or economy in management, its next task is to decide whether the deficiency is likely to continue. A decision on this point should not be difficult to make as, while the published traffic receipts for the first eighteen weeks of 1934 show an improvement of £2,704,000 compared with 1933, a substantial proportion of this sum will be offset by additional expenditure incurred in working the increased traffic. Furthermore, the deficiency in net revenue exceeds £22,000,000 and the tribunal will, therefore, have to decide what modifications, if any, should be made in railway charges to enable the companies to earn their standard revenue. The companies were invited by the tribunal to give their views on this point and have intimated that after carefully considering the position they are still doubtful whether a general increase of charges at the present time would materially improve their financial position, while the position of their revenue does not enable them to propose any reductions. At the same time they desire to reserve the right, as in former years, to bring forward proposals for increasing charges when, in their view, circumstances justify the adoption of such a course.

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The Railways of Luxembourg

THERE are two railway systems in the Grand Duchy of Luxembourg, namely the Prince Henry Railway and the Guillaume-Luxembourg Railway. The former is a Luxembourg concern, in which a large holding is in Belgian hands, and which works its own lines. The Guillaume-Luxembourg lines are held under a 99-year concession granted in 1859, at the end of which time they revert to the State. This company has never worked the lines itself, but leased them before 1871 to the Eastern Railway of France, and after that to the Alsace-Lorraine (Imperial German) Administration. After the Armistice the Luxembourg Government gave notice to Germany to terminate the arrangement and the company transferred the lease to the new French management of the Alsace-Lorraine lines. In 1921 the Luxembourg Government concluded agreements with both its railway undertakings and with Belgium, which needed ratifying by the legislature. This ratification was not forthcoming for the agreement with the Guillaume-Luxembourg concern. Luxembourg and Belgium entered into an economic agreement in 1922 which gave the latter considerable interest in the fortunes of the Guillaume-Luxembourg lines. The former Government then put forward fresh proposals embodying all three agreements, but this was lost in the Chamber by one vote and the Government resigned. The new Government then brought forward an agreement with the Guillaume-Luxembourg line alone, and this was accepted by Parliament. But the company considered that the terms infringed its rights and brought an action against the Government, which was successful.

In the meantime the Government had to do something to ensure that the lines were worked, so it concluded an arrangement with the Alsace-Lorraine management in 1925 by which the latter took over the working of the lines. As the wages of the staff in Luxembourg were at a higher rate than in Alsace-Lorraine the Government had to make good the difference, but it compensated itself for this by raising rates and fares. The business management of the Guillaume-Luxembourg section had then to pay a million francs annually to the Government, but later it was agreed to share this loss equally, and to divide profits in a like manner. This arrangement terminates, according to notice now duly given, on July 1 next, as a result of the above-mentioned law suit, the final outcome of which has been judgment in favour of the restoration of the railway to the Guillaume-Luxembourg Company. The latter has now, therefore, to consider working its lines, and will, it is assumed, again arrange with the Alsace-Lorraine administration to that end. The plans of the Government have not yet been announced. As has already been recorded in our columns, an association of Luxembourg railwaymen recently passed a resolution in favour of the amalgamation of the two Luxembourg railway systems and their operation by the Alsace-Lorraine administration.

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Welding

WELDING is entering more and more into all sorts of steel structural work to replace riveting. One of the greatest advantages of welding is its economy, both in the work of fabrication and also in the saving of material used in the structure. This has the further advantage of reducing weight, a most important consideration where rolling stock is concerned. A series of articles has been appearing in our monthly contemporary *The Railway Engineer* since March, outlining the latest practice of welding on the German State Railway, where it has been the subject of the most careful research and control. The first dealt with the welding of goods wagons, in the April issue welded carriages were described, and in the current number the application of welding to locomotive construction is discussed. The saving in weight in the latest main line passenger stock attributable to the use of welding instead of riveting has amounted to something like 25 per cent. in all-steel stock. This saving is due not only to welding as such, but also to the fact that the abolition of riveting enables modifications in the structural design to be adopted which in themselves make for weight reduction. In bridge repair work, weight reduction is sometimes a vital matter, but another advantage of welding in this application is the saving which is often possible in eliminating complicated drilling for new rivet holes. Another important application of welding, of course, is the building up of various worn parts, and very important economies have been effected during the last few years in this country by the application of that process to worn crossings, the Southern Railway alone having so treated about 7,500 crossings up to the end of 1933. By welding, rails can be kept in service almost indefinitely, but, in view of the high stresses to which those forming crossings in fast running lines are subjected, such lengthening of life might afford opportunity for incipient flaws, normally harmless, to develop by fatigue. It may eventually be found advisable to apply a soundness test—which could be done either magnetically or by means of X-rays—to each crossing before welding. In *The Railway Engineer* articles already referred to, the comprehensive precautions taken by the German State Railway to ensure sound welds include X-ray examination. Such precautions as these naturally add to the expense, but there can be little doubt that the additional cost, by reducing risk of failure virtually to nil, is justifiable. Certainly its proportion to total costs is so small as barely to reduce at all the important savings which accrue from welding. Naturally there are limitations to the scope of welding, and these limitations are recognised, although there is a likelihood of their being widened as research proceeds.

LETTERS TO THE EDITOR

The Editor does not hold himsel responsible for opinions expressed by correspondents

Recovering Lost Time

28, Ashburn Place, S.W.7.
May 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read the letter from Mr. J. R. Hawkes in your issue of May 11 on recovering lost time. So far as I know the facts are that the question of danger does not arise so long as all speed limitations, due to the conformation or condition of the line, to the strength of the materials employed in the permanent way, or to the design of the engine and rolling stock, are respected. All these limitations can be, and are, accurately calculated, and instructions to the drivers are issued in accordance with these calculations. No driver can ever be excused if he ignores these limitations, whether he is making up lost time or not.

I did not think it worth while mentioning so obvious a thing in my very short letter, and it did not occur to me that any reader of a technical journal of the standing of THE RAILWAY GAZETTE could regard this otherwise than as axiomatic.

As a matter of fact, when I wrote my previous letter I was thinking much less of the drivers than of the officials, whose business it is to give the drivers their instructions. The neglect of railway officials to issue proper (or, in some cases, any) instructions to the drivers on the subject of making up lost time has always, to my mind, been one of the blackest blots on British railway management. An indication that the G.W.R. at last was taking some action appeared to me to be highly satisfactory.

Uninstructed people talk glibly enough of the supposed dangers of making up lost time. They do not seem to have the faintest glimmering of the real dangers of failing to make up time. In 1915 an accident occurred near Gretna in which 224 people were killed and 246 injured. Unless certain main-line trains from Euston had been late at Carlisle it would have been a physical impossibility for the manœuvres to take place, which caused the accident. And there are plenty of other accidents which have been caused by unpunctuality. My own belief is that unpunctuality, caused by failure to make up lost time, is by far the most dangerous feature of railway working, as well as the most futile and costly.

Your obedient servant,
MONKSWELL

St. Wilfrid's Vicarage, Brighton.
April 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In THE RAILWAY GAZETTE, dated April 27, Lord Monkswell refers, in a letter, to a run on the 12 noon Torbay Limited which gave a net time of 157 minutes between Paddington and Exeter. This is such a phenomenal figure, approached only twice, as far as I can ascertain, that I am writing to suggest that more detailed figures are obtained either from Lord Monkswell or from the G.W.R. authorities, and published in your columns.

Yours truly,
W. A. E. WESTALL

[At our request, Lord Monkswell sent us his log which gives mile-post times only, and from which we have made the following notes:—With nine coaches weighing with passengers and luggage about 320 tons, engine No. 6029, *King Stephen*, on the down Torbay Limited, reached Exeter 5 sec. before the public arrival time of 2.50 p.m.—169 min. 55 sec. for 173·5 miles—notwithstanding signal checks at West Drayton and Burnham Beeches, severe permanent way slowings at Kintbury, Wellington and Cullompton, and the usual cautious travelling over the new cut-offs at Westbury and Frome. Lord Monkswell estimates the net time of the run, allowing for the maintenance unbrokenly of the effort of the locomotive past the points at which speed was reduced, at 153 min., as against a working time of 169 min. The time from Paddington to Reading, 36 miles, inclusive of the two slight signal checks, was 36 min. 35 sec.; after recovery from the Reading service slack, the engine did well up the slight ascent through the Kennet valley, averaging 67·8 m.p.h. over the 15 miles between posts 40 and 55. Then came the Kintbury check, followed by so rapid a recovery that the 4 miles between posts 65 and 69 were run at an average of 64·8 m.p.h., and the average over the last mile to Savernake summit was as high as 59·6 m.p.h. Down to Westbury, three consecutive quarter-miles (87¼ to 88) were run at 88·2 m.p.h.; the average over the 14¼ miles between posts 80 and 94¼ was 80·5 m.p.h., and over the 24¼ miles from Savernake to post 94¼ it was 75·8 m.p.h. Savernake (post 70) was cleared in 70 min. 53 sec. from Paddington, and mile-post 94¼, immediately before shutting off steam for the Westbury cut-off, in 90 min. 4 sec. Some more high speed was made beyond Brewham summit, with an average of 80·8 m.p.h. between posts 111 and 115 (before Castle Cary), and 80·0 m.p.h. between posts 129 to 133, down to Curry Rivell junction; the 27 miles from post 111 to post 158¼ (just beyond Cogload, by the old mileage via Bristol) were run at an average of 74·4 m.p.h. No time to Taunton station figures in the log, but the 164 mile-post (about a mile beyond Taunton) was passed in 135 min. 20 sec. from Paddington, 143·5 miles distant. The slowing at Wellington somewhat hampered the ascent of the bank; between posts 172 and 173, up to the tunnel entrance, speed remained steadily at 35 m.p.h., and the final mile to Whiteball box was run at 37·2 m.p.h. Whiteball (the 174 mile-post) was passed in 149 min. 4 sec. from London. After the Cullompton p.w. slowing speed mounted rapidly again to a maximum of 81·8 m.p.h. at the 190¾ mile-post—the fourth "80" on the journey—and Exeter was reached, as previously mentioned, in 169 min. 55 sec. from Paddington.—ED. *R.G.*]

The Signal Engineer's Department

Maida Vale, London.
March 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In connection with the letter from the General Manager of the Nigerian Railway in your issue of March 6 concerning the Signal Department, may I be permitted to say the following:

In the first place, without the slightest intention to impute unworthy motives or to suggest wrong interpretations, I say that it is not desirable that we should accept without proof statements affecting the profession of Railway Signal Engineering.

Secondly, I suggest that as so many railways of the world, many of them smaller than the Nigerian Railway, employ Signal Departments with success and advantage, the Nigerian Railway, is opening itself to attacks if accidents do occur, and if they find themselves unable to cope economically with increased traffic problems.

Thirdly, I suggest that Mr. G. V. O. Bulkeley should study the question of signalling and the Signal Department not from his personal view point but rather from the point of its value to the running of traffic easily, economically and safely, and from the view point that it is of the greatest importance to all who travel, and to the goods that are transported, that they are transported and travel economically, safely and in good time. If the basic facts of the railway were known it should not be difficult to devise a policy which would include a department of signalling that would command the support of the management and be of advantage to the railway, not only in point of £ s. d., but also in the operation of traffic and the matter of safety.

Yours faithfully,
"J. S. TRAFFIC"

PUBLICATIONS RECEIVED

A Manual of Foundry Practice. J. Laing (Foundry Superintendent, J. Stone & Co. Ltd.) and R. T. Rolfe (Metallurgist, W. H. Allen Sons & Co. Ltd.). London: Chapman & Hall Limited, 11, Henrietta Street, W.C.2. 267 pages. Price 15s.—The authors state in their foreword that the motive for this work was the deplorable lack of books dealing with foundry practice in a manner commensurate with the needs of the foundry executive and the engineer of to-day, since foundry practice has of recent years undergone fundamental transformation.

Their book will be welcomed by both engineers and foundrymen as a practical contribution to the literature of iron foundry practice. It presents a review of moulding plant and methods, and discusses the metallurgy of cast iron in language which, although sufficiently exact, is as clear and forthright as that used to describe the less technical aspects of foundry work. Non-ferrous founding is covered by collateral references throughout the text and by a disappointingly short concluding chapter. In view of the special experience of one of the authors, the behaviour of the high tensile brasses might have received more attention.

In the chapters devoted to the melting of cast iron and to special methods of producing it, the authors miss the opportunity to complete their treatment of high duty irons and also make no mention of the electrical smelting of cast iron—a surprising omission in an otherwise well-balanced book. The index would have been better with more cross-referencing, but the illustrations are excellent.

Os Caminhos de Ferro na Grande Guerra (The Railways in the Great War). By Josquim Abranches, Major in the Portuguese Engineers' Corps. Tipografia Peninsular: Figueria da Foz. 272 pages. 10 in. × 7½ in. Price, not stated.—This book, dedicated to the memory of the services rendered by the Allied railway contingents in the war, and particularly to the British, has been written by an officer who was in command of the 3rd Portuguese Railway Company during hostilities and has since reached a high position in the Regiment of Engineers. He explains that he originally wrote the work soon after the war ended, when there was practically no literature available on the subject, and published it in the pages of the Portuguese *Military Review*. Thinking that the material would still be useful, notwithstanding the many comprehensive works that have been written since 1918, he resolved to publish the articles in book form. The story is well told, and there is an interesting preface, dealing with the history and importance of means of transport in military operations, written by General Ferreira Martins. The work covers the military railway organisations of the countries engaged in the war, the degree of technical preparation attained, the condition of the railways in the theatre of war in 1914, the work of mobilisation, supply and other services, and the use of the railways in the various principal strategic operations. Interesting statistical data are included in each chapter. There are also chapters dealing with constructional and temporary engineering work and repairs, as well as a special chapter on the narrow-gauge field lines and another devoted to the conditions immediately succeeding the armistice. Naturally a good deal of attention is given to the activities of the Portuguese Corps, but the information given on the whole subject is well proportioned. The book has appeared, however, somewhat late in the day, when the interest taken in the subject has diminished and is practically confined to military circles.

Student Travel.—The programme of tours arranged by the National Union of Students, 3, Endsleigh Street, London, W.C.1, is set out in an illustrated handbook entitled "Student Travel, 1934." Walking, cycling, climbing, and canoeing parties are catered for and the itineraries cover the majority of European countries. Sightseeing tours have been arranged in South Africa and students are offered special facilities for visiting Russia.

Liverpool Overhead Railway.—An attractive pictorial guide to the Liverpool Overhead Railway has just been published by the company's information bureau, 31, James Street, Liverpool. The opportunity afforded by the system of a comfortable tour of the famous Merseyside port is emphasised in a coloured folding map of the railway and the docks alongside which it runs, and in numerous photographic reproductions of the shipping activity which can so conveniently be seen from the carriage windows. Quotations from Rudyard Kipling's "The Seven Seas" head the picture pages. A suggested programme for a day in Liverpool, including a visit to an ocean liner, is a useful feature of the publication.

Seeing Britain and Ireland.—Facilities for holiday travel in all parts of the British Isles are described in the 1934 edition of the Dean and Dawson handbook, "Seeing Britain and Ireland." Three useful and novel maps assist the tourist in making his choice of the areas he will visit. One of these indicates the type of scenery to be found in all parts of Great Britain, the second shows the chief centres of interest in England and Wales, and the third is a large folding map of the British Isles incorporating a simple scheme to assist in the estimation of fares. A section of general information gives particulars of the conditions and availability of the various classes of reduced fare and ordinary tickets issued in Great Britain and summary time-tables of services to and from Ireland, the Isle of Man, and the Channel Islands.

Summer Holidays Abroad.—Thomas Cook & Son Ltd. sends a handbook for Continental holidays, giving particulars of escorted tours to all the popular European resorts and centres of interest, with a selection of overseas holidays and short cruises. The William Tell and Riviera tourist expresses are now supplemented by a special train performing a grand tour of Germany. An inclusive fare provides for hotel accommodation, sightseeing excursions, and a seat at the Oberammergau Passion Play. This edition of the handbook also marks the inauguration of air travel holidays at "all-in" fares.

Train-Describing Equipment.—The Siemens and General Electric Railway Signal Co. Ltd. sends a new bulletin dealing with equipment for train describing between signal cabins and between stations. A full illustrated account is given of the instruments involved in the three available systems, which provide for name or number description or description by name and destination. These particulars are further elaborated, and the systems shown at work under service conditions, in the pages devoted to three representative installations. The installations chosen for this purpose are those on the Brighton line of the Southern Railway, in the Glasgow, St. Enoch, area of the L.M.S.R., and between Romford and Shenfield on the L.N.E.R. This section of the bulletin is completely illustrated with photographic reproductions and diagrams, and the operation of the equipment receives detailed attention.

Cut-Outs and Sealing Chambers.—British Insulated Cables Limited, Prescot, Lancs, sends a series of pamphlets dealing with Ironclad Service cut-outs, Service cut-outs, and cast iron sealing chambers. The equipment listed is for 250 V circuits and includes single and multi-pole instruments for one, two, and three-way connections. The Service range of single-pole cut-outs are housed in cases of non-conductive material. They can be obtained in complete sets with connectors and sealing chambers, also in non-conductive cases. Cast iron sealing chambers are supplied separately for use with both ranges of Service cut-outs. The Ironclad cut-outs are available in a variety of patterns and are fitted with sealing chambers in certain sizes. The fuse units of all instruments are provided with expansion chambers at each end into which the gases are definitely directed. Interchangeability of parts is a useful feature of the two Service ranges.

THE SCRAP HEAP

WHEN LORD DERBY WAS ASKED TO BECOME CHAIRMAN OF THE L.N.W.R.

". . . I find that I was a Director of the North Western Railway 16 years before the Minister of Transport was born. I am quite certain that the Minister of Transport took the earliest opportunity of beginning his successful career, but I will tell you something else about his successful career. I was once asked by my colleagues on the North Western to approach Lord Derby. That is the way you talk about going to see great men; you approach them like approaching wild beasts. I was asked to approach Lord Derby with a view to his becoming Chairman of the North Western Railway, but he refused, and I did not know until recently that his reason was this. Lord Derby was a far-seeing man; he foresaw the end of railways and the coming of road transport, and he therefore concluded that at some time or other there must be a Minister of Transport, and if there was to be a Minister of Transport he had the very man for the job! It would never have done for Lord Derby to be the Chairman of a great railway and his son to have been the Minister of Transport! . . ."—*The Rt. Hon. Viscount Knutsford, speaking at the 76th annual dinner of the Railway Benevolent Institution.*

* * *

THE MINISTER OF TRANSPORT'S SOUTHERN BRIEF

". . . I once had a brief and it was marked with an exiguous figure by Mr. Bishop, of the Southern Railway. The scene of the hearing was somewhere in the West Country, and I was provided by a generous railway company with a return ticket, upon which they clearly marked the fact that if they killed or maimed or otherwise damaged me in transit they would not hold themselves responsible! I spent the whole day defending a hopeless imposition upon the public with all the energy and eloquence at my command, to the irritation and not the satisfaction of the judge before whom I appeared. I returned by one of the fast trains on the Southern Railway, which I think did the whole journey in the astonishing time of about eight hours, and I injured my digestion and assisted the revenues of the Southern Railway by eating the last bit of ham at Exeter station, and I never saw Mr. Bishop again until 12 years later, when I went to Waterloo as a Director! . . ."—*The Hon. Oliver F. G. Stanley, M.C., M.P., Minister of Transport, speaking at the 76th annual dinner of the Railway Benevolent Institution.*

* * *

In the early days of railway making in South Wales many were the encounters between the contractors' men —navvies of various nationalities— and the natives of the district. On one occasion when the Welshmen were having the worst of a fight a breathless messenger broke in on the peace of a prayer meeting and begged the congregation for Heaven's sake to come to the aid of their countrymen near the village inn. It is said that his appeal was not in vain.—*From the "Western Mail."*

* * *

In the accompanying illustration is shown a firebox roof stay taken from a locomotive on the South Australian Government Railways after only nine months' service. The stay is of B.S.S. No. 16 steel, and was originally $1\frac{1}{8}$-in. diameter. The extremely bad water in South Australia occasioned rapid corrosion just above the firebox crown plate, and the minimum diameter of the neck shown in the illustration is $\frac{7}{16}$-in.

Badly corroded firebox stay from South Australia

AT CARLISLE

Railway enthusiast (unsuspectingly) to airman passenger: "London next stop! That's not bad, is it?"

Airman passenger (condescendingly): "And after that Marseilles next hop. Also not bad, eh?"

* * *

WHO IS "MR. METRO?"

There is a good story running around Wardour Street, our film critic tells me, of the innocent who went to a famous film executive and said: "I know there is a Mr. Goldwyn in Metro-Goldwyn-Mayer" (N.B.—Mr. Goldwyn has been out for a long time). "I know there is a Mr. Mayer. But who is Mr. Metro?" "Don't you know?" was the unfaltering reply. "Metro is the man who owns the Paris Underground."—*From the "Morning Post."*

* * *

In a speech delivered at the inauguration ceremony of the American diesel engined high speed railcar, the Burlington Zephyr, Mr. Philip H. Gadsden, President of the Chamber of Commerce, said: "This remarkable silvery shaft of stainless steel, 196 feet in length and capable of travelling easily at 110 miles an hour, the first of its kind to be manufactured, soon will be thrilling the people of the West as it glides over the rails of the Chicago, Burlington and Quincy Railroad. But I venture the prediction that like the motor car and the airplane it soon will be a common sight throughout the country wherever the twin rails of the railroad companies wend their way."

* * *

Police officers sitting for an examination in London recently were told the following story, and it is said that only three out of a hundred gave the right answer to the following question:—

The proprietor of a jeweller's shop was going off for the week-end. When he had locked up the safes he gave the keys to Mr. Brown, the night watchman, saying, "Please give these to the manager when he comes in the morning. I'm catching the 8.50 train tonight." Brown took the keys and then said, "I beg your pardon, sir, but I do hope you won't catch that train, but go by your usual train at 9.10." The proprietor replied, "Why, what on earth's the matter?" "Why, sir, the fact is I had a dream last night that there was a bad smash on the 8.50." On his way to the station, the proprietor, half ashamed of himself for his superstition, decided to take the later train. He was held up on the journey because the first train had crashed and several passengers were killed. Upon his return to business on Monday morning, he sent specially for Brown and said to him, "You saved my life by your warning. Here's £20 for you and I give you a fortnight's notice."

Why was he fired?

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

Crop prospects in Argentina—French State Railways' automatic interlocking plant—Motor buses as feeders to electric railways near Paris—Conference at Cape Town between Rhodesian Governments and railways

ARGENTINA

The Maize Crop

Argentine railways serving the large area in which maize cultivation is intense are likely to be badly hit in connection with the partial failure of this year's crop, to judge from the final report issued on the subject by the Ministry of Agriculture. The total area sown in hectares was 6,514,000, of which 2,549,000 hectares may be considered lost owing to intense heat and lack of rain during the summer months. The total production is estimated at 5,500,000 tons, a decrease of nearly 20 per cent. compared with the previous year. The average harvest during the last five years was 7,720,000 tons and the best, that of 1930-31, exceeded 10½ million tons.

The Institute of Transport

At the annual general meeting of the Buenos Aires branch of the Institute of Transport, the following committee was elected for the ensuing year: President: Mr. John Wilson (Traffic Manager, B.A.G. Southern and B.A. Western Railways); Vice-Presidents: Messrs. C. E. W. Duley (Assistant to the General Manager, Central Argentine Railway), and J. George Mayne (Percy Grant & Co.) Members: Messrs. G. R. Mawson, L. W. Makin, E. St. John Parry, Kenneth Marshall, D. S. Martin, Robert Flack, F. C. Egerton, F. A. Bottomley and H. G. Beckwith.

FRANCE

Automatic Interlocking

Automatic interlockings have come into extensive use in recent years in the United States, where the large number of instances in which railway routes cross each other on the level affords an extensive field for this method of working. So far little has been done in Europe, but the Mersey Railway and the Underground have had examples of automatically worked points, and so has the Vienna Stadtbahn. An installation of this kind has now been put in at Puteaux station, French State Railways. On one side of the station there is a junction between the goods line from La Folie and the line from St. Lazare, and on the other there is one between the lines to Issy-Plaine and Versailles (R.D.) A bay road was recently put in on the south side of the station, connecting with the Issy line, to enable a shuttle service to be worked in that direction. When there is no goods traffic to be handled, the signalling for the Paris Versailles route is purely automatic, and therefore it was decided to operate automatically the cross-over and the points communicating with the bay line, with the arrival and departure of the Issy line trains. This has been done in conjunction with a small route-lever frame constructed by the Compagnie des Signaux Electriques, equipped with the necessary master lever and time relay controls. This makes a very neat arrangement and meets all requirements in a safe and efficient manner. The station staff is able to work the frame when required, as when goods trains are most numerous there is little passenger traffic to attend to.

Reorganisation Economies Around Paris

Economies estimated at 35,000,000 fr. a year (£437,500 at 80 fr. to the £) will be effected in the Parisian tramway and motor bus services as the result of a decision by the General Council of the Seine Department to close a number of lines now run at a loss. This decision will bring increased traffic to the Metro and electric suburban lines. In the last eight years, the Seine Department has paid 1,600 million fr. (£20,000,000) to cover the deficits. At the same time it was decided to stop running the small passenger steamboats on the Seine because of the loss incurred. Under the new plan, the motor buses will be utilised largely to bring traffic to the electric railways in the suburbs and to the Metro stations in Paris.

A Signal Instruction Car on the P.L.M.

The P.L.M. has just placed in service an instruction car, converted from an old travelling postal van, for the purpose of giving lectures and demonstrations to the staff concerned in the installation and maintenance of electrical signalling apparatus. It is equipped with a model railway along one side, fitted with track circuits, and several sets of the latest pattern of the P.L.M. lock-and-block, combined with Jousselin train describers. Electric point detectors, lever lock, cab signal apparatus, signal repeaters and other appliances used on the system are also installed, so that lessons can be given on their construction and working. A large diagram of the complete electrical connections of the model railway is placed above it. To demonstrate other apparatus, the instructor can show the necessary diagrams by means of a projection lantern. Seats are provided for twenty students. A certain amount of apparatus is carried in the car, housed in cupboards which are specially fitted to hold everything securely during a journey. We believe that the P.L.M. already has a car fitted up for giving instruction to signalmen and the traffic staff on the operation of signals and block instruments. The new vehicle is intended for purely technical lectures. The P.L.M. has always been to the fore in educational work and this latest development too, should prove a success and assist in maintaining the company's record for efficiency in signalling.

Rail and Waterways Co-ordination

Competition between the waterways and the railways is to be regulated under the scheme for the co-ordination of the transport systems in France, and for this purpose a supplementary decree has been promulgated by M. Flandin, Minister of Public Works. It provides for the formation of a central committee and district commissions, which will prepare agreements between the inland navigation and railway authorities for an equable division of traffic between the waterways and the railways. Under this decree, inland navigation enterprises will be required to obtain preliminary authorisation to run boats engaged in goods traffic.

RHODESIA

Traffic Improvements

The traffic results of the Rhodesia Railways for the first quarter of the current financial year show a great improvement over the previous year and confirm the impression that the trade depression which has affected the two Rhodesias in the last three years is definitely lifting. The total earnings at £901,931 show an increase of £279,951, while expenditure has only risen by £9,297, the net operating revenue for the period being £311,752. During the last financial year there was a shortfall of over half a million pounds in the amount required to meet the loan provision—£1,082,973—but it would now appear probable that the loan provision will be practically met in full out of revenue during the current year.

The base metal industries which produce such a large proportion of the traffic on the Rhodesia Railways show satisfactory improvements, the tonnage of chrome ore for the three months being 14,237 tons against 2,285 tons in the previous year, copper is 43,141 tons against 26,748, and zinc 5,312 tons

against nothing, while coal and coke traffic has risen from 92,679 tons to 132,845 tons.

Railway Conference

A conference is being held at Capetown on May 22, between representatives of the Governments of Southern Rhodesia, Northern Rhodesia and the Bechuanaland Protectorate and the Rhodesia and Mashonaland Railway Companies to discuss amendments to the existing railway legislation. The railway reserves have been heavily depleted during the recent depression and the necessity of amending the legislation to enable the reserves to be built up has become apparent. Sir Cecil Rodwell, Governor of Southern Rhodesia, will preside at the conference, which will be attended by Sir H. Young, Governor of Northern Rhodesia, the Prime Minister of Southern Rhodesia and other Government representatives, while the railways will be represented by Mr. D. O. Malcolm, Director of the British South Africa Company, and Mr. H. Chapman, General Manager and Resident Director.

JAPAN

The Crack Trains

The fastest train in the Empire, the Tsubame (Swallow) running between Tokyo and Kobe, a distance of 601·2 km. or about 373·5 miles in 9 hr. at an average speed of 68·2 km., or say 42 m.p.h., was inaugurated on October 1, 1930. Mr. Koki Yuki, then one of Minister Egi's right-hand men, was mainly responsible for this innovation. Next in order of speed come the Fuji Limited and the Sakura Express running between Tokyo and Shimonoseki (1,130·5 km. or 702·8 miles), both having average speeds of 67 km. or 41 m.p.h. Considering the gauge, 1·067 m. (3 ft. 6 in.) and the topographical difficulties encountered, these speeds compare favourably with those of other countries. It is understood that the Government Railways may in the near future operate another express comparable to the Tsubame on the Tohoku main line that connects Tokyo with the north-eastern districts, and streamline locomotives may be run on the Tokaido main line.

ABYSSINIA

The Franco-Ethiopian Railway

Passengers for Abyssinia travel by steamer through the Red Sea to Djibouti, in French Somaliland, which is the maritime terminus of the railway, and has a well-built and conveniently arranged station. Railway construction in Abyssinia was first projected in 1894, when the Emperor Menelik granted the concession for a line from Djibouti to the White Nile, but development was slow, and it was not until 1897 that work was begun. The railway is of metre gauge and approximately 485 miles in length, 99 miles being in French Somaliland territory. Some 65 miles were opened to traffic in 1900 and the line reached Dire Douah (186 miles) in 1902, but was not extended to the capital until 1917.

Permanent Way

The steepest gradient is 1 in 38, and there are numerous curves, the sharpest being of 328 ft. radius. On the section first opened the rails are 32 ft. 10 in. (10 m.) long, 40 lb. per yd., on 11 steel sleepers each, but on the extension they are 39 ft. 4½ in. long, 50 lb. per yard, and rest on 13 sleepers. Steel is used for sleepers on account of the depredations of the termites, whose large tower-shaped mounds are seen about the country.

Rolling Stock

The rolling stock consists of comfortable bogie carriages; those of the first and second class are painted white and the third class are French grey, as are also the goods vehicles. Electric lighting and ventilating fans are used, while the windows are fitted with side screens; lavatory accommodation is provided on each car. The seats, of which there are six in each compartment, have loose overall linen covers which are changed at intervals. Compressed air braking and American type central couplings are used, the latter operated by handles at the side of the vehicle.

There are now 54 locomotives at work, 46 passenger carriages, 445 goods wagons, including about 60 open type wagons, ranging up to 30 tonnes capacity. Ordinary goods take about 10 days and express goods about three days to reach the capital from the sea. In common with the country, the railway has suffered a good deal from the general economic crisis, but as yet it is in the lucky position of having no motor competition to meet, most road transport being performed by mule or camel teams.

[*See also editorial notes on page* 865.]

Sketch map of the Franco-Ethiopian Railway which joins the capital of Abyssinia with the French Somaliland port of Djibouti

EGYPT

Remarkably Cheap Excursions

The special excursions composed of second-class convertible sleeping cars described in THE RAILWAY GAZETTE of December 22 last, have been running at frequent intervals since December 12. The programme is for the train to run from Cairo to Luxor during one night, stay at Luxor the second night and return the third, giving the passengers, who are housed in the train, two clear days in which to see the monuments and tombs of this world famous resort. In all, ten trips were made by these special trains, and in addition three of these coaches were run attached to train No. 88 on March 25, excursion fares being charged. The inclusive fare for the first three trips run was only P.170 (or about £1 14s. 9d.), with an extra charge of P.10 (2s.) for blankets if required, but from the fourth trip to the tenth the charge was raised to P.180 (about £1 18s. 10d.) inclusive of blankets. This charge covered not only the rail journey from Cairo to Luxor and back, but also sleeping accommodation on the train for the duration of the visit, food for two days (three meals a day), local transport charges and entrance fees to the monuments.

The distance from Cairo to Luxor is 670 km., say 417 miles, and the total receipts from these excursions amounted to £E.4,051,300 m/ms., and 2,206 passengers were carried. The expenses were £E.2,583,418 m/ms., thus showing a net profit of £E.1,467,852 m/ms.

Combating Road Competition

The Egyptian State Railways are, as previously mentioned in these pages from time to time, engaged in keen competition with road motor transport, and among the measures adopted by them to combat it are the following:—

(1) Reduction of fares in all classes.
(2) Introduction of return tickets between all points at 10 per cent. reduction on two single journey tickets.
(3) Introduction of special day return tickets at single fare and a half on certain sections where motor competition is intense.
(4) Improvement in train service by higher speeds and improved timings and additional trains.
(5) Opening of additional halts at suitable spots.
(6) Creation of a road police service partly at the expense of the Railway Administration to see that regulations in regard to the operation of motor vehicles are strictly observed.

The general question of additional taxes on motor cars is under consideration by the Government, but no decision has yet been taken.

THE FORM OF THE STEAM LOCOMOTIVE

By W. A. TUPLIN, B.Sc.

A FEW years ago the President of the Institution of Mechanical Engineers remarked that certain well-known locomotives on one of the British main line railways were just like those built by George Stephenson. The chief mechanical engineer of the company later recalled this comment, and expressed the hope that some new engines just introduced would also turn out to be just as if Stephenson had made them. As the 100 years or so for which the locomotive has been in existence have witnessed extraordinary advances in the mechanical arts, these utterances seem to relegate the locomotive to a lowly position in the modern engineering world, and appear to reflect unfavourably on the progressiveness of locomotive design.

What is the actual position? In the first place, it is undeniable that, in its broad essentials, the present-day locomotive bears considerable resemblance to the *Planet* of 1830. The boiler is of the fire-tube type, the barrel arranged horizontally above the wheels, and the firebox extended downwards so that the grate lies between the frames. At the front end, the products of combustion enter the smokebox, a cylindrical prolongation of the boiler barrel. Draught is induced by projecting the exhaust steam from the blast-pipe, which rises from the floor of the smokebox, into the chimney mounted on the top. Power is transmitted to the driving axle from cylinders placed at the smokebox end. Admission of steam to the cylinders and its subsequent release to the atmosphere are controlled by valves operated from the driving axle.

In stationary steam engine practice there have been many alterations. Boilers are now usually of the water-tube type, mechanically stoked, and the draught is produced naturally or by fans. Valves and their operating mechanism are of more refined design, so as to approach closely to the theoretical ideal in steam distribution. The steam is used in two or more cylinders in succession, and is finally condensed instead of exhausting to the atmosphere, adding to the power output of the engine by virtue of the vacuum thus created. Very often, too, the engine is not of the reciprocating type at all, but is a high speed rotary machine, a turbine.

Now all these changes in stationary plant have been carried out with one idea, namely, that of obtaining more power for each pound of coal consumed, in other words, of raising the efficiency. In a modern power house, something like 23 per cent. of the fuel energy becomes available at the turbine, against a theoretically possible figure of perhaps 35 per cent. Turning to the locomotive, we find that it converts only 6 or 7 per cent. of the energy in the coal into useful work in pulling the train, and, comparing these figures, one cannot but feel, with the critics, that the locomotive engineer has not kept pace with his brethren of the stationary plant.

This method of comparison, however, overlooks an important point. The locomotive has not only to move its train; it has also to transport itself, and consequently unlimited elaboration of design is not permissible, or the engine's own weight might become an insufferable burden. Furthermore, it has to run through narrow places, and round considerable curves, and so its designer is handicapped by space limitations. The contrast between the space occupied by a locomotive capable of developing 1,500 h.p. continuously, and a stationary plant of equal output, is striking. The British locomotive is seldom more than 40 ft. long without tender, 9 ft. wide, and 13½ ft. high. The boilers in the stationary plant may occupy a room some 70 ft. long, 50 ft. wide, 20 ft. high, the engine and condenser are accommodated in a separate house, and the whole installation is mounted on concrete several feet in thickness.

The design of such a stationary engine is characterised by massiveness and extreme rigidity, bearings are of ample area and elaborate arrangements are made for lubrication. The locomotive designer has to attach his boiler and cylinders to a couple of steel frame plates 1½ to 2 in. in thickness, the frames are suspended through springs from the axles, and the wheels have side play relative to the frames and to the track. Owing to restricted space, it is necessary to use bearings which are relatively small for the loads they have to carry, and consequently the bearing pressures are such as would make a stationary engine designer feel thoroughly uncomfortable. Furthermore, the lubrication of locomotive bearings is nearly always effected by means of a wick feed, a most elementary device which, nevertheless, is found quite reliable.

Stationary Engine and Locomotive Operating Conditions

Whilst the stationary engine is usually expected to run at one speed only, the locomotive has to work at all rates from zero up to a maximum driving wheel speed of perhaps six revolutions a second, and it has to run in either direction. It must be able to exert a heavy pull when moving slowly in order to get its train "off the mark" and to work it up to speed. On an undulating road it may at one moment be toiling uphill at 40 m.p.h. and a few minutes later be flying down a favourable gradient at 80 m.p.h. The boiler has to produce steam at a very high rate of evaporation and therefore the fire must be forced by an intense draught, which inevitably causes considerable loss of heat through the chimney.

From the point of view of stationary plant practice, the locomotive is called upon to operate under unreasonably difficult—almost impossible—conditions, and yet, day after day, it does it. Herein lies the locomotive engineer's justification of his methods. It is not that no one has ever attempted to supersede the Stephenson type of locomotive. Many revolutionary locomotive designs, incorporating some of the refinements of the stationary plant, have been tried, but when all essential factors have been taken into account, none has been found to show any definite advantage over the orthodox form of locomotive. Higher thermal efficiencies have certainly been obtained, but heavier capital costs and maintenance charges usually handicap the special locomotive, and in many instances it lacks that flexibility which is necessary for railway service. The internal-combustion engine, which has given the highest thermal efficiencies of any type of prime mover, also has failed, as yet, to find general favour for the heaviest conditions of railway haulage. As it is unable to run at low speed, requiring some sort of speed reducing transmission gear, it cannot be applied to purposes of traction with the same simplicity as the steam engine.

Modern Locomotive Reliability

Although the present-day locomotive is in general layout a Stephenson locomotive, advance in design and constructional methods have, of course, led to remarkable reliability and economy in working. In these days it is very rarely that a defect develops which necessitates the removal of a locomotive from its train, and to take an

outstanding example the regular summer service non-stop runs of the Gresley Pacifics over the 393 miles between London and Edinburgh show to what degree of trustworthiness every detail of design has been brought. Furthermore, these engines have run as many as 200,000 miles before being withdrawn for repairs, a fact which pays eloquent tribute to excellence of material and construction.

The adoption of higher working pressures has resulted in lower fuel consumption, but involves heavier boilers or the use of special steel, and so has led to efforts at weight reduction in other directions. Such parts as connecting rods and coupling rods, for example, are now often made from alloy steel. Cubic inch for cubic inch, an alloy steel is no lighter than ordinary steel, but, being capable of withstanding much higher stresses (nickel-chrome steel is roughly twice as strong as mild steel), a smaller amount of material is required for any particular purpose, and so appreciable lightening results. A double gain is effected in the case of connecting rods and coupling rods, for in such members the major stresses are due to centrifugal forces which depend on the weight of the rod itself. In the Gresley Pacifics the connecting rods, some 10 ft. between the centres, are machined down to a web thickness of only $\frac{3}{8}$ in., incidentally introducing a degree of resonance which is noticeable when knock develops in the big ends.

Valve Arrangements

It is in the matter of valve arrangement that the first definite signs of a departure from Stephenson methods are to be seen. For 60 or 70 years, steam distribution was effected by means of flat slide valves held against their working faces by steam pressure often aggregating several tons. To move such valves obviously calls for valve gear of heavy design, and moreover absorbs an appreciable proportion of the engine's power. The flat slide valve has now been almost completely superseded by the piston valve in which steam tightness is maintained by moderate spring pressure. With piston valves, lighter valve gear is possible, less power is absorbed, and better steam distribution is practicable, because there is no serious objection to long valve travel.

The latest development is the use of poppet valves, generally similar to those of the automobile engine. These offer the same advantage over the piston valve as that does over the flat valve. The power required to operate them is negligible compared with the output of the engine, and as admission and exhaust are separately controlled, the designer has complete freedom in fixing valve events to the best advantage. Operated by a gear-driven camshaft, with moving parts totally enclosed and oilbath lubricated, poppet valves constitute a distinctive departure from conventional locomotive methods.

Streamlining and Performance

Associated with the question of enclosing the mechanism is that of producing a streamline shape. With increasing speed the effect of air resistance becomes more and more important, and experiments show that the drag on the engine is a substantial proportion of the total windage of the train. It seems very likely, therefor, that streamlining will receive more attention in the future, and the locomotive will begin to differ considerably, in appearance at least, from its Stephenson forbears.

From the point of view of performance the effect of improved design has been to increase the power output of the locomotive, first, of course, by virtue of increased dimensions, and, secondly, by converting a greater proportion of the fuel energy into useful work. Internal resistance has been diminished, both by reduction of friction in moving parts, and by improved design of steam passages, and the modern express locomotive is thus a much livelier machine than its predecessors; it can maintain 75 m.p.h. on the level with a substantial load, and down a moderate gradient it can run at that speed almost without steam.

That the Stephenson locomotive is still with us, albeit vastly improved in detail, is a tribute to the genius of its creator in combining so early all the features which experience has since shown to be fundamentally important, and is no reflection on the designers who have followed. There is nothing to suggest, either, that it will be superseded for main line service for some time to come.

MECHANISED ACCOUNTING ON THE FEDERATED MALAY STATES RAILWAYS

A start has been made to substitute mechanical for manual accounting on the F.M.S.R., the punched card system being used

As a measure of economy, accounting machines were introduced in the Chief Accountant's Department of the Federated Malay States Railways in the early part of 1933. The system used is the punched card accounting system and the machines installed were supplied by Powers-Samas Accounting Machines Limited, of Aldwych, London, and are of British manufacture throughout. They comprise:—Four automatic key punches, one automatic sorter and one tabulator. The female operating staff consists of a supervisor and six machine operators.

The scheme of operations, together with the necessary documents, having been prepared before the arrival of the machines, the complete operating staff was able to take up training on the day the machines became available for use. After one month's training the staff was able to take over the preparation of operating statistics, and other work previously carried out by hand.

At present the machine accounting section prepares the following information:—

Engine miles: passenger, goods and departmental. Train miles: passenger, goods and departmental. Engine performances: miles and hours per engine. Train punctualities: per train. Wagon miles: main and branch lines. Empty haulage: main and branch lines. Wagon loading: main and branch lines by principal commodity groups. Net ton-miles (data): all sections. Gross ton-miles (data): all sections. Cash remittances: daily and in decade periods by divisions. Mechanical department: stores distribution.

The production of such information by "hand and head" method is an expensive process, and other useful statistics cannot be attempted by hand except at prohibitive cost. The equipment now installed is capable of producing the bulk of railway operating statistics and costing data at a greatly reduced cost and without that delay which so frequently renders such information of little use.

Mechanical accounting at Kuala Lumpur, Federated Malay States Railways, showing machines at work

Under the European lady supervisor the machine operators include Eurasians, Chinese, Indians and Ceylonese, all of whom have acquired a high standard of skill in the production of accurate and timely information. An extension of the operations performed by the accounting machines is under consideration, and it is anticipated that during the current year the complete stores accounting work of the Railway Department will be organised on the punched card system, enabling further economies to be effected. The capital cost of the installation will be speedily covered by reductions in the cost of clerical services.

A NEW POWER SIGNALLING INSTALLATION ON THE VICTORIAN RAILWAYS

To cope with heavy electric suburban and race traffic an up-to-date plant has been installed at Caulfield, near Melbourne

RECENTLY a new power signalling installation was brought into use at Caulfield, a junction 6½ miles south-east of Melbourne, with which city it is connected by four tracks—up and down through lines on the north side and up and down local lines on the south. These become six lines through the station, and then divide into two diverging double lines. Heavy suburban electric traffic is handled on all lines. Caulfield also handles very heavy race traffic, the race-course being situated opposite the station on the south side of the line. The normal daily traffic totals 272 electric trains, 14 country passenger trains and approximately 40 goods trains, while on race days, which number 17 per annum, up to a one-minute service is provided for return traffic on the fast through lines by express trains to the city. For this special race traffic, separate first and second class trains are despatched from No. 1 platform—both trains being loaded simultaneously.

Up to the time of the change-over to power signalling, two mechanical signal-boxes were required; one of 88 levers at the Melbourne end of the station and the other of 103 levers at the other end. The new signal-box (Fig. 1) has an all-electric locking frame of 80 levers, manufactured and supplied by McKenzie & Holland of Spotswood, and shown in Fig. 2. There are 32 signal levers, 32 point levers and 16 spare. The signal levers have electric locks for indication and approach locking, while point levers are fitted with initial locks for route and section locking, in addition to the usual normal and reverse indication locks. Only one indication light is provided for each lever; in the case of the signal lever this shows when the signal is " off," while in the case of the point lever, it indicates when the lever is free to be operated. A mechanical locking between the levers is provided.

For the purpose of displaying the low-speed aspect on the signal, if the main arm cannot be operated, levers governing home signals are equipped with stick push buttons. Time releases for the release of the approach locking of main line signals are mounted upon a hinged panel on the west wall of the box. All dwarf signal levers are equipped with clockwork time contactors—these being detected in the indication lock controls. A well is constructed in the floor under the interlocking machine, which enables a maintainer to stand upright while working on the circuit controllers and terminal panels beneath the locking frame. The 136 a.c. relays are housed on five steel relay racks on the ground floor (see Fig. 3).

The illuminated diagram shown in Fig. 2 measures 10 ft. by 3 ft. The indications are of the continuous strip type, 55 separate track circuit sections being shown, which are illuminated when the tracks are unoccupied. Single stroke approach bells are provided to announce the arrival of each train upon the approach section outside the station. Trains are rung on from the adjacent signal-boxes, being described by code on electric bells operated from the a.c. supply. Telephones are provided close to all home signals and at several points in the goods yard for ready communication with the signalman.

Power is supplied at 2,200 volts from the 25-cycle signal supply ring mains. It is first fed through oil immersed sectioning switches, thence through automatic overload switches to two 2,200V./110V. 10kVA. transformers.

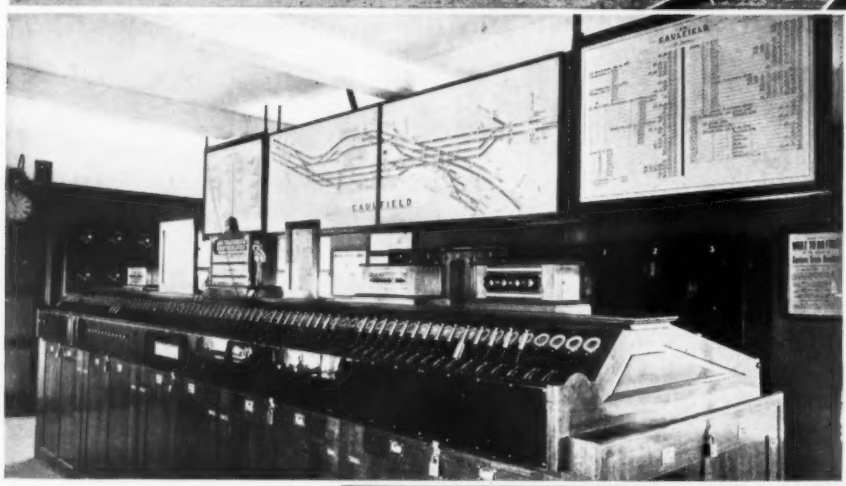


Fig. 1—(Above) New signal-box viewed from Melbourne side and down departure home signals from Nos. 3 and 2 roads. No. 1 road is on the extreme right

Fig. 2 — (Above) Interior of signal-box, showing locking frame and illuminated diagram

Fig. 3—(Right) Relay rack on ground floor

Fig. 4—Through down arrival home signals on the left; down local arrival home signal on the right

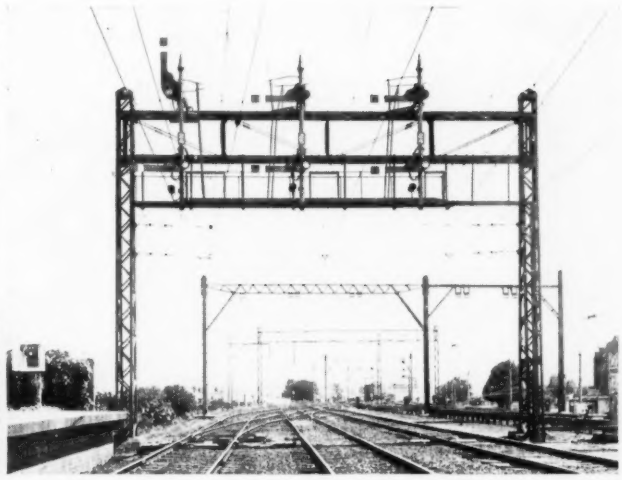


Fig. 5—Looking towards Melbourne; up departure home signals from Nos. 1, 2 and 3 roads

The 110-volt supply is taken to the main switch board, Fig. 6, from which either transformer can be switched on to feed the various outgoing mains and signal-box bus bars.

Three-Position Upper Quadrant Signals

Although light signals have been in general use for some years past, it was decided that three-position upper quadrant signals should be employed at Caulfield. The reason for this arrangement was that the four tracks from Melbourne were already equipped with this type of signal and that a sufficient number of General Railway Signal Company's Model 2A, 110-volt a.c. mechanisms to carry out the work were already in stock. Each home signal, as in Figs. 4 and 5, is equipped with two arms. In some cases one arm is fixed and serves in combination with the other arm to exhibit the correct speed signal aspect. Beneath each lower arm is fixed a short-range light signal unit for displaying the low-speed aspect. An electrically-operated train stop is worked in conjunction with each signal, and until it indicates the "clear" position, the "proceed" aspect—with the exception of the low-speed light—cannot be displayed by the signal. The dwarf signals are of McKenzie and Holland's type T2.

Two types of point mechanism have been used: the more remote points are operated by McKenzie and Holland style M machines, while for those nearer the box General Railway Signal Company's Model 5A have been installed. Here again the use of two types of machine was due to the necessity of utilising existing stocks. Both types operate from the 110-volt supply, the former

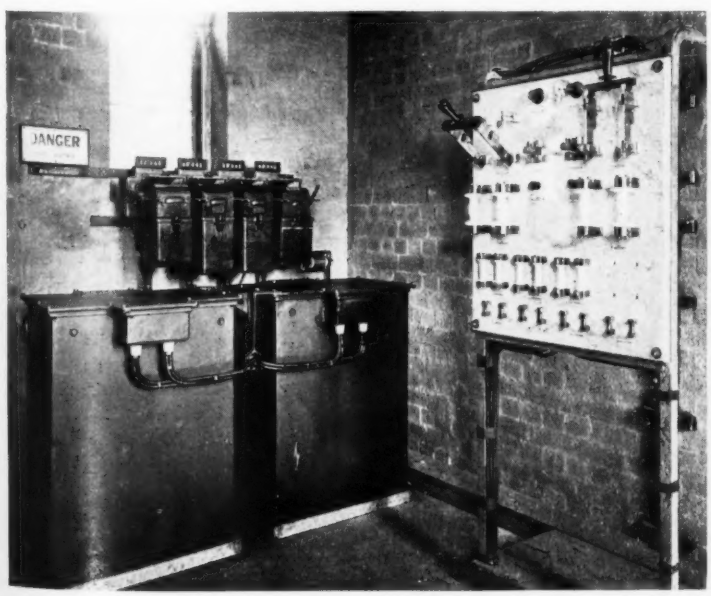


Fig. 6—Main transformers 2,200 V./110 V. 10kVA.— 2,200 V. oil switches and 110 V. switchboard

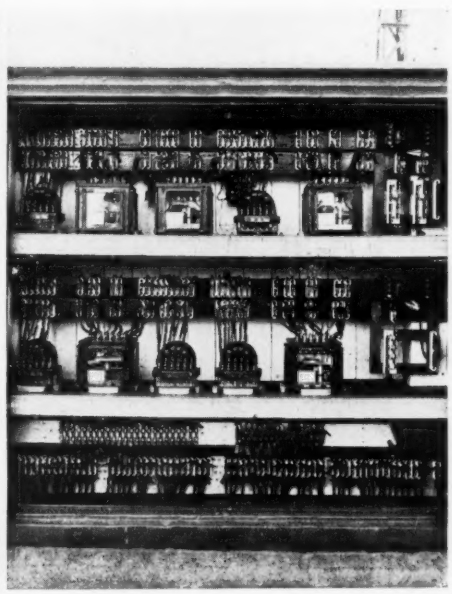


Fig. 7—Outdoor type relay box (12-way) housing 10 relays and 2 trackfeeds

through the medium of type F controllers, and the latter direct through the point lever contacts. In both cases the position of the points is repeated in the box by three-position relays. For the control of these, small transformers located at the points step the voltage up to 250 V.

The main wire-runs are carried in wood trunking on pegs above ground, surface trunking being used for crossing under tracks, while the wires from the trunking to the apparatus are carried in galvanised iron pipes. The majority of the wire-runs are of single 0·064 Ancalite, while track connections and wires to apparatus located on the track subjected to vibration are 7/0·029 Ancalite. For the distribution of the 110-volt power supply, 7/0·064 and 7/0·044 Ancalite are run throughout the whole length of the interlocking, several conductors being paralleled where required to avoid excessive voltage drop. The total amount of Ancalite wire used amounted to 100 miles of 1/0·064, 10 miles of 7/0·029, 7 miles of 7/0·064 and also 18 miles of R.C.T.B.

The signal control relays are housed adjacent to their respective signals in one-way or two-way cast-iron boxes or, where relays can be grouped, in sheet-iron covered wooden boxes of up to 12 relay capacity (Fig. 7). Track feed transformers are also housed in the latter boxes if convenient, but usually they are in cast-iron boxes, from which two double rail or up to four single rail track circuits are fed from a 50 VA. 110 V.-6 V. transformer. With the exception of the approach and platform tracks, all track circuits are single rail with resistance feeds.

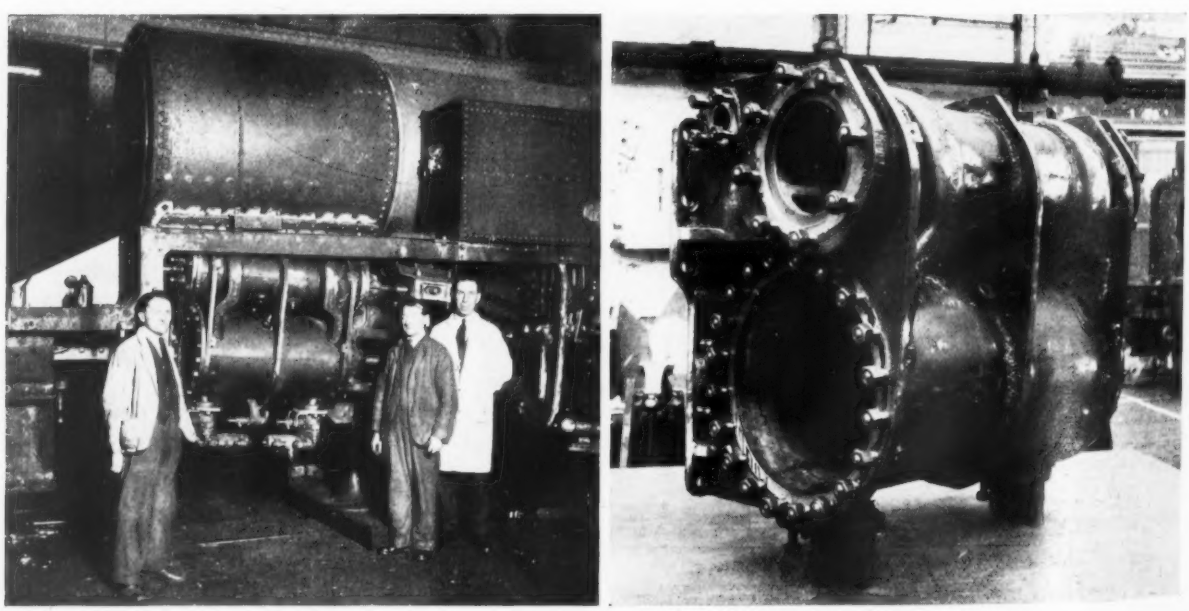
In order to obtain the full advantages of power working, three-position automatic signals were installed on both the double lines to the next station beyond Caulfield, thus allowing the block working, which had previously been in operation on these sections, to be abolished. The plans were prepared and the installation was carried out by the Railway Department of Victoria. The change over was effected with negligible delays to trains.

WELDING ON AN L.M.S.R. LOCOMOTIVE

AN interesting example of the use of welding in locomotive construction is provided by the standard 2-6-4 tank locomotive No. 2424 of the L.M.S.R., in which many parts have been so fabricated and a number of components attached by welding which previously were riveted or bolted. The locomotive in question was constructed at the Derby works, and the principal point of interest is that the cylinders were completely fabricated from steel plates, and are fitted with cast iron liners for the cylinder barrels and steam chests. This engine has now been at work for some time with satisfactory results.

In addition to the fabrication of the cylinders, the following frame stretchers were also welded to the frames, although the riveting was retained: to hind buffer beam, under footplate, in front of coal bunker, behind firebox, above driving wheels, between motion plates, behind smokebox, for Bissel truck swivel pin, and between cylinders. A number of other small details were also welded to the frames.

Steam chest barrel, exhaust branches and parts (the last not yet welded)



Fabricated cylinder (left) in position on locomotive, and (right) before erection

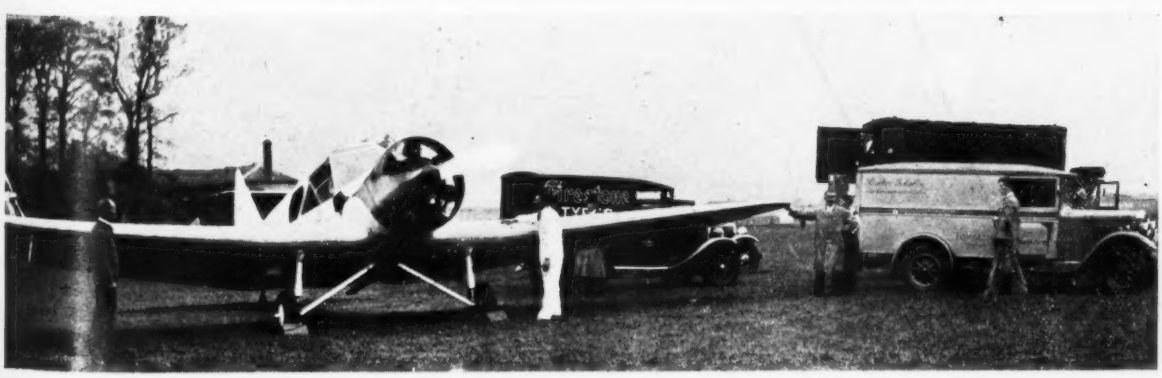
Above : Inauguration of the Plymouth — Liverpool air service of Railway Air Services Limited, on Monday of last week

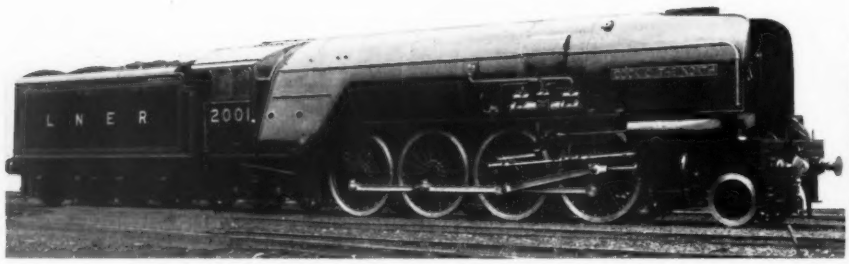
INTERNAL AIR LINES

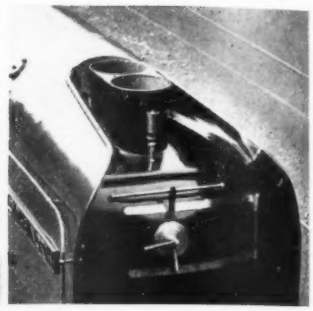
See editorial note on page 863, biography of Sir Harold Hartley on page 881, and news article on page 884

Left : A Spartan air liner passing over Cowes, Isle of Wight, on the air service to and from London which began on May 1 in association with the Southern Railway

Below : Beginning the first experimental flight of the London—Manchester freight air service of Bouts - Tillotson Transport Limited

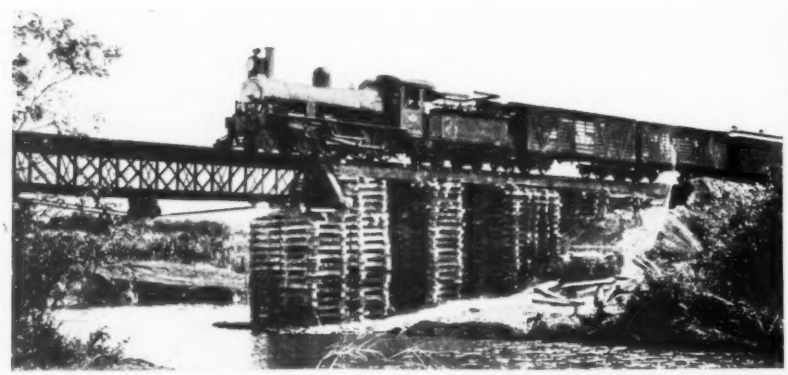


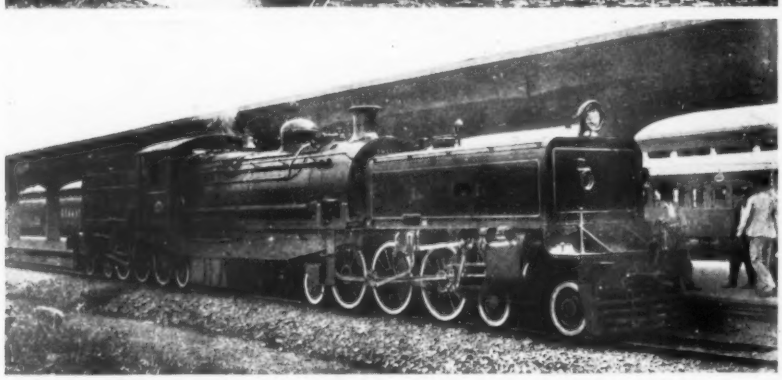




Above: The first of a new series of three-cylinder 2-8-2 express locomotives recently completed at the Doncaster works of the L.N.E.R. for working express passenger trains over the difficult line between Edinburgh and Aberdeen. The three cylinders, 21 in. diameter by 26 in. stroke, drive the second pair of 6 ft. 2 in. coupled wheels and steam distribution is effected by poppet valves with R.C. mechanism. The boiler carries a steam pressure of 220 lb. per sq. in. The engine is fitted with the K.C. double blast pipe and in front of the double chimney a chime whistle is mounted, as may be seen in the right-hand illustration. The tractive effort at 85 per cent. of the boiler pressure is in the neighbourhood of 44,000 lb. Both illustrations are from Topical Press photographs

Right: Repairing the Sharnbrook viaduct, L.M.S.R. New steel floor plates being welded to tops of main girders, the track meantime being carried on longitudinal timbers. After asphalting the steel deck and laying brick on the asphalt, the track was ballasted up. The goods line viaduct is seen on the right





TYPICAL SCENES ON THE LEOPOLDINA RAILWAY, BRAZIL: Left, above, up-country scene; left, below, Beyer Garratt locomotive at Barão de Maná station, Rio; right, Beyer Garratt locomotive No. 381 hauling train of coffee on the Itapemirim—Victoria section

RAILWAY NEWS SECTION

PERSONAL

Mr. William Whitelaw and Sir Murrough J. Wilson, K.B.E, have been appointed representatives of the L.N.E.R. on the Cheshire Lines Committee in place of the Right Hon. Lord Faringdon, C.H., and Colonel William Johnson Galloway, deceased.

Sir Malcolm Hogg has been elected a Director of the Bengal & North Western Railway Co. Ltd., vice the late Mr. Edward Christian.

INSTITUTE OF TRANSPORT

The undernamed have been elected by the Council of the Institute of Transport to take office on October 1, 1934:—

President: Mr. Sidney E. Garcke, Chairman, Tilling & British Automobile Traction Limited. *Vice - Presidents*: Messrs. C. le M. Gosselin, Managing Director, H. Viney & Co. Ltd., Preston; Sir James Milne, C.S.I., General Manager, Great Western Railway; F. Handley Page, C.B.E., Managing Director, Handley Page Limited; T. E. Thomas, General Manager, Tramways, London Passenger Transport Board; W. V. Wood, Vice-President, London Midland & Scottish Railway. *Past Presidents to Serve on the Council*: Colonel Sir Joseph Nall, D.S.O., T.D., D.L., M.P., Mr. Roger T. Smith, Sir Josiah C. Stamp, G.B.E., Mr. Frank Pick, Sir David J. Owen, Mr. William Whitelaw. *Hon Treasurer*: Sir Henry P. Maybury, G.B.E., K.C.M.G., C.B. *Hon. Librarian*: Mr. R. Bell, C.B.E. *Hon. Solicitors*: Joynson-Hicks & Co.

Mr. H. T. Rice, General Manager, London and Export, English Electric Co. Ltd., has been elected a Director on the Board of the company.

Sir Hugh Arthur Rose, D.S.O., J.P., a Director of the London Midland & Scottish Railway, has been appointed a Deputy Lieutenant of the City and County of the City of Edinburgh as from May 11.

Mr. E. Cooper, General Manager of the Anglo-Argentine Tramways Company, left Buenos Aires on April 18 on a few months' leave.

Sir Harold Hartley, C.B.E., M.C., F.R.S., Vice-President, L.M.S.R., who, as announced in THE RAILWAY GAZETTE of April 6, has been elected Chairman of Railway Air Services Limited, was born in 1878 and educated at Dulwich College. Proceeding to Oxford, he took a First Class in Natural Science and in 1901 became a Fellow and Tutor of Balliol College, and subsequently Bedford Lecturer on Physical Chemistry. During the war he was a Captain in the 7th Leicestershire Regiment,

Sir Harold Hartley, C.B.E., M.C., F.R.S.,

Elected Chairman Railway Air Services Limited

1914-15; Chemical Adviser to the 3rd Army, 1915-17; Assistant Director, Gas Services, G.H.Q., France, 1917-18, and Controller of Chemical Warfare, Ministry of Munitions, 1918-19. He was awarded the M.C., was three times mentioned in despatches and was eventually promoted to be Brigadier General. In 1919 he was decorated with the C.B.E., and was head of the Mission which reported on German Chemical factories in that year. Sir Harold is Chairman of the Fuel Research Board. Elected a F.R.S. in 1926, he was knighted in 1928. Two years later Sir Harold was appointed Vice-President (Works and Ancillary Undertakings) and Director of Research, L.M.S.R.

INDIAN RAILWAY STAFF CHANGES

Mr. L. S. Deane, Controller of Railway Accounts, has been granted leave for six months as from April 15, and Mr. B. N. Mitra has been appointed to officiate in his place.

Mr. A. L. Carroll has been appointed to act as Deputy Chief Engineer, B.N.R., in place of Mr. R. R. MacFadden, granted leave preparatory to retirement, as from April 20.

Mr. E. W. Russell has been appointed to officiate as Deputy Agent (Works), G.I.P.R., as from March 28.

Mr. C. S. Whitworth, Chief Mining Engineer, Railway Board, has been granted leave for 15½ months preparatory to retirement, as from March 3. Mr. J. R. Harrison, Superintendent of Collieries, is appointed to officiate as Chief Mining Engineer from the same date.

Mr. L. N. Flatt has been appointed to officiate as Chief Mechanical Engineer, E.B.R., as from February 9.

Mr. O. B. Lacey has been appointed to officiate as Deputy Chief Mechanical Engineer (Shops), E.B.R., as from February 8.

Mr. S. H. Fisher, who, as announced in THE RAILWAY GAZETTE of May 11, has been appointed Assistant Chief Operating Manager, Euston, L.M.S.R., was educated at Repton School, entering L.N.W.R. service in March, 1904. After obtaining experience in the Goods and Traffic Departments he was appointed Outdoor Assistant to the Superintendent of the Line in 1910. In November, 1912, he was appointed Assistant to the District Superintendent at Euston for the Southern District of the L.N.W.R., and in May, 1919, was made Assistant District Superintendent at Liverpool for the Northern District. In March, 1922, the Crewe District Goods Manager's District was converted into a Traffic Superintendent's District, and Mr. Fisher was appointed the District Traffic Superintendent there. In March, 1925, he was appointed Operating Assistant at Crewe to the Chief General Superintendent of the

L.M.S.R., which position was later designated Divisional Superintendent of Operation, Western Division. Mr. Fisher was appointed Divisional Superintendent of Operation, Derby, as from June 1, 1929, a position he held until his appointment, in January, 1932, as

Mr. S. H. Fisher,

Appointed Assistant Chief Operating Manager, L.M.S.R.

Operating Assistant to the Chief General Superintendent. Nine months later he became Operating Superintendent, Euston, the post he now vacates to take up his new duties as Assistant Chief Operating Manager. Mr. Fisher is a Major in the Engineer and Railway Staff Corps.

Leys School and joined the L.N.W.R. in 1909. During the war he served in France 1914-16, and in the Salonica Force until 1919, attaining the rank of Major, which he now retains in the Reserve of Officers. He was mentioned in despatches and was awarded the

Elliott] [*& Fry*

Mr. F. A. Pope,

Appointed General Assistant, Chief Operating Manager's Department, L.M.S.R.

Greek Order of Merit and the White Eagle of Serbia. Mr. Pope was a member of the Inter-Allied Food and Transport Commission in reoccupied areas, and from 1919 to 1921 was on the staff of the Ministry of Transport. He returned to L.N.W.R. service in 1921, and from that date until 1925

with the reorganisation on the divisional system, and subsequently acted as Superintendent of the Line for periods in 1927 and 1929. He returned to the L.M.S.R. in 1930, as Assistant to the Chief Officer for Labour and Establishment, and 18 months later

Mr. E. Falconer,

Appointed Goods Terminal Superintendent, Euston, L.M.S.R.

became General Executive Assistant on Sir Josiah Stamp's staff at Euston. In 1932, Mr. Pope's services were first lent to the Government of India to proceed to that country and, as Chairman of a carefully selected committee of Indian railway officers, to suggest methods of increasing efficiency and

Mr. D. S. McBright, M.B.E.,

Western Divisional Superintendent, Southern Railway, 1930–34

Mr. P. Nunn,

Appointed Western Divisional Superintendent, Southern Railway

Mr. C. S. Cobley,

Appointed Assistant London Western Divisional Superintendent, Southern Railway

Mr. F. A. Pope, who, as announced in THE RAILWAY GAZETTE of May 11, has been appointed General Assistant, Chief Operating Manager's Department, Euston, L.M.S.R., was educated at

served in the General Manager's Office, first of the L.N.W.R. and then of the L.M.S.R. In the latter year he was appointed Divisional Superintendent of the Nigerian Railway in connection

effecting economy on Indian railways. Mr. Pope returned to the L.M.S.R. in the spring of 1933. He went out to India again in October of that year, and the same committee, under his

chairmanship, has prepared a second report reviewing progress made since the first report was issued, and making additional suggestions for increasing efficiency and effecting economy. Mr. Pope recently returned a second time from India and is now posted to the Operating Department of the L.M.S.R., as already announced.

Mr. E. Falconer, who, as announced in THE RAILWAY GAZETTE of May 11, has been appointed Goods Terminal Superintendent, Euston, L.M.S.R., was educated at the Secondary School and Technical College at Derby and at Sheffield University, where he qualified as an electrical engineer. He also occupied first place in the special two-years' course on economics for Midland Railway staff at the University. In 1896 he entered the Chief Goods Manager's Office, Midland Railway, at Derby, and, from 1901 onwards, obtained varied experience throughout the line as relief clerk and agent. Mr. Falconer was placed on special duty in the Chief Goods Manager's Office in 1912 to reorganise the clerical staff and work throughout the system, and in 1916 he was appointed Assistant to the London Goods Operating Superintendent. His final position on the Midland was as London Goods Operating Superintendent, which he held from 1919 until the amalgamation in 1923. During his tenure of this office a modern system of cartage control for London was introduced. Thereafter Mr. Falconer became Goods Assistant to the General Superintendent, Midland Division, L.M.S.R., at Derby, being transferred in the following year to Euston as Station Operating Assistant to the Chief Goods Manager. In 1927 he was appointed Road Transport Assistant, and in 1930, Outdoor Assistant to the Chief Goods Manager, the position he now relinquishes to take up the duties of Goods Terminal Superintendent.

Mr. D. S. McBright, M.B.E., M.Inst.T., who, as announced in THE RAILWAY GAZETTE of May 11, has retired from the position of Western Divisional Superintendent, Southern Railway, joined the London & South Western Railway as a junior clerk in 1889, and for the greater part of his service has been connected with the General Manager's office. Whilst in that office he was Secretary of the Traffic Officers' Conference, the Safety Appliances Committee and the Electrification Committee. In 1916 he was appointed Assistant London West District Superintendent and also acted as Secretary of an important sub-committee of the Railway Executive Committee during the war. For his services Mr. McBright was made a Member of the Order of the British Empire. In 1923 he was appointed Divisional Operating Superintendent, Western Division, Southern Railway, and in 1930 became Western Divisional Superintendent. Mr. McBright was a Director of the Devon General and Southern National Omnibus Companies. He is an Associate of the Chartered Institute of Secretaries by examination, and a Member of the Institute of Transport.

Mr. P. Nunn, who, as announced in THE RAILWAY GAZETTE of May 11, has been appointed Western Divisional Superintendent, Southern Railway, joined the London Brighton & South Coast Railway in 1900, and for ten years gained valuable experience in all branches of station working at several important suburban stations. He was then transferred to the Parcel Manager's staff and to the office of the Superintendent of the Line in 1912. From then until 1923, except for a period during the war, he was engaged in passenger commercial work. He obtained first position at the Croydon Signalling School during both the 1914-15 and the 1920-21 sessions. In 1923, Mr. Nunn was appointed Assistant London West Divisional Commercial Manager, and in 1930 was promoted to be Assistant London West Divisional Superintendent, the position he now vacates to go to Exeter as Western Divisional Superintendent. He served in the Royal Garrison Artillery during the war.

Mr. C. S. Cobley, who, as announced in THE RAILWAY GAZETTE of May 11, has been appointed Assistant London West Divisional Superintendent, Southern Railway, joined the London & South Western Railway in 1901, and after gaining experience of general station work, was transferred to the Main Line District Superintendent's office at Clapham Junction, where he passed through the various departments in that office. In 1911 he entered the office of the Superintendent of the Line at Waterloo, where he was attached to the Through Vehicle, Theatrical and Public Inquiry Department, and during the war was engaged in the section dealing with the transportation of naval and military traffic. At the termination of the war, Mr. Cobley was transferred to the Rules and Regulations and Signalling Department, and soon after the amalgamation was appointed Deputy Chief of that Section, in which capacity he represented the Southern Railway Company on the Special Committee appointed to revise the Railway Clearing House Standard Book of Rules and Block Regulations. In 1930 he was appointed Assistant Western Divisional Superintendent, the post from which he is now transferred to the London West Division in a similar capacity.

Mr. Alistair Fraser, K.C., has been appointed Traffic Vice-President of the Canadian National Railways, the post in which he has been acting for the past 18 months.

Señor Marcial Bustinduy has been appointed Chief Mechanical Engineer of the Madrid, Saragossa & Alicante Railway, in place of Señor Renato André, who has voluntarily retired on pension.

The Proposed Haifa-Baghdad Railway

On Tuesday evening Mr. E. H. Keeling lectured to the Royal Central Asian Society in the hall of the Royal Society on "The Proposed Haifa-Baghdad Railway." General Sir Osborne Mance presided.

Mr. Keeling began his lecture by outlining the various schemes that had been put forward from time to time to provide a railway link between the Mediterranean Sea and Baghdad. In 1856 the Euphrates Valley Railway Company was floated in London with a capital of £1,000,000. This project received the consent of the Turkish Government, which promised to assist to the extent of offering a 6 per cent. guarantee. Backing by the British Government was also promised, but was suddenly withdrawn by Palmerston when he found that by so doing he could obtain some military concession from the French Government which he required at the time. Later, however, Disraeli took an active interest in the scheme, and even went so far as to procure Cyprus as a protection for the proposed railway terminal on the mainland, but in 1880 just as the scheme looked as if it might materialise Disraeli was defeated by Gladstone and the matter was dropped. The Germans were also interested in the construction of a railway from Haidar Pacha to Baghdad, and lines were eventually constructed from Haidar Pacha as far as Aleppo and Nisibin, and from Baghdad to Kirkuk. After the war of 1914-18 construction ceased, but between Kirkuk and Nisibin a motor service of the Iraq railways now runs, forming an accepted land route from the Mediterranean to Baghdad.

On turning to the present proposal for the Haifa-Baghdad railway, Mr. Keeling said that, although various surveys were attempted after the war, it was not until 1930 that a complete survey was made by Messrs. Rendel, Palmer and Tritton for the Crown Agents for the Colonies. It was then obvious that Haifa, with its new harbour (which was opened last year), was the most suitable Mediterranean seaboard terminus. The survey was, therefore, carried out from Haifa and Baghdad at a cost of about £100,000, necessitating the employment of a personnel of 500 and a fleet of 22 motor cars and lorries. From Haifa to the Jordan there was a ruling down gradient of 1 in 100 over comparatively easy country, but the 30 mile ascent

from the other side of the Jordan up the valley of the Wadi el Arab was by far the most difficult part of the whole route. Seven tunnels and eight viaducts would be necessary, and the ruling grade was one of 1 in 50. Beyond this was the belt of lava country, where a way had to be forced through a surface layer of basalt boulders. The desert portion of the route, which then followed, rose to a maximum of 3,000 ft. and fell as low as 200 ft. above sea level on reaching the Tigris. A station would be built in mid-desert at Rutbah, an important airport, while the Euphrates would be met at Hit. Running alongside the Euphrates, the railway would then turn and cross the fertile plain between the Euphrates and the Tigris to reach Baghdad.

Mr. Keeling said the estimated cost of the line, which would take four or five years to complete, was about £7,000,000, inclusive of rolling stock. The average speed of the trains would be 33 m.p.h., and oil would be burned as fuel. As regards the prospects of the line ever being built, Mr. Keeling was not over optimistic, although he thought that, with the increasing tendency of Iraq and Persia to look westward for their trade, the line would yield a profit after about ten years of operation.

Questions in Parliament

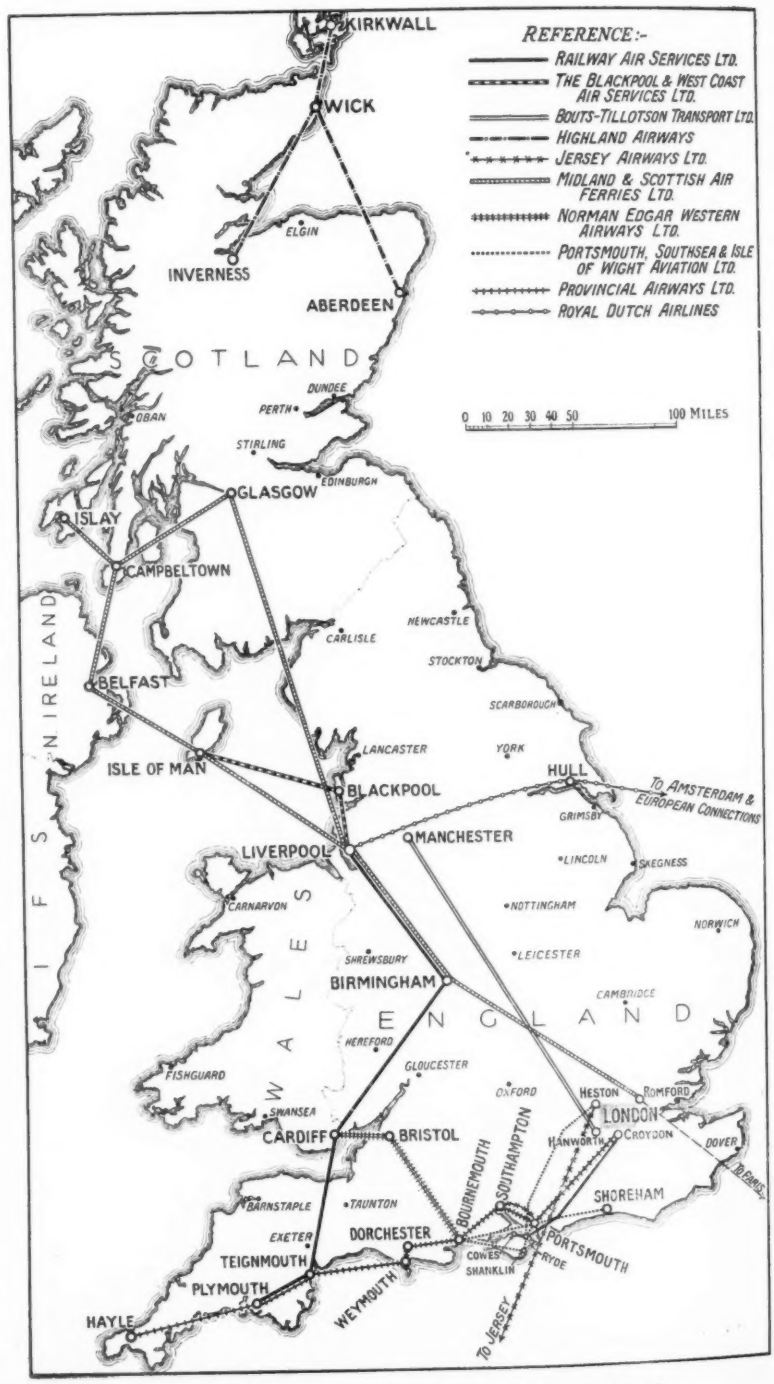
Railway Rates for Potatoes

Mr. Louis Smith on May 14 asked the Minister of Transport whether he was aware that the railway rates granted for the carriage of potatoes for Woolworth & Co. from Lincolnshire were approximately one-tenth of those charged to competing smaller traders, and that when the recent application of this firm was considered by the tribunal objections were lodged without effect by the Mining Association of Great Britain, the National Chamber of Trade, the Birmingham Chamber of Commerce, the National Federation of Fruit and Potato Traders' Associations, the Traders' Co-ordinating Committee, the National Federation of Iron and Steel Manufacturers, and the Birmingham Chamber of Commerce; and whether, in view of the dissatisfaction to which these arrangements were giving rise, he would take steps to introduce amending legislation.

Mr. Stanley.—I am aware that the Railway Rates Tribunal has recently approved an agreement made in pursuance of section 37 of the Road and Rail Traffic Act, 1933, between the railway companies and Woolworth & Co. with regard to the charges for the conveyance of the firm's traffic generally. The agreement was approved after a prolonged public hearing at which objectors were fully heard, I see no reason for amending the Act, which was passed so recently at last session.

The Internal Air Services of Great Britain

Since the inauguration of the Great Western Railway air service between Cardiff and Plymouth on April 12 of last year there has been a steady growth throughout the country, and particularly in the south, of similar services. Most of these suspended operations for the winter months, but already many of the concerns which provided air routes last summer have recommended their services on a generally much larger scale. The Great



Sketch map of the internal air lines of Great Britain

Western route, which was extended in May of last year to Birmingham, has, of course, been taken over by Railway Air Services Limited, and further extended to Liverpool; while Spartan Air Lines Limited has co-operated with Railway Air Services in the maintenance of a London (Croydon)—Isle of Wight service which was also inaugurated last summer, but from Heston. Apart from Railway Air Services, there are eight companies already operating regular air services in this country, and a new route, between Liverpool and Hull (with Amsterdam connections) is to be inaugurated by the Royal Dutch Air Lines. This latter service, which has been authorised by the Postmaster General to carry mails from Hull, will connect with a number of other internal routes at Liverpool and with important Continental lines at Amsterdam.

An interesting development in the carrying of internal mails is the granting of a contract to Highland Airways Limited by the Postmaster General for the regular conveyance during the summer of mails to Kirkwall. As this will take the place of the present mailing arrangements, no extra charge over the ordinary postage will be made for this service. So far no other internal air-mail concessions have been granted by the Postmaster General, although last summer the G.W.R. was allowed to carry mails over its Birmingham - Cardiff - Teignmouth - Plymouth route.

TABLE OF INTERNAL AIR LINES IN GREAT BRITAIN

Operator	Service	Details	Notes
Railway Air Services Limited	Liverpool (Speke)–Birmingham–(Castle Bromwich)–Cardiff–Teignmouth (Haldon)–Plymouth (Rodborough)	One service daily (Sundays excepted) until revision of time-table on July 28	Service operated by Imperial Airways
	London (Croydon)–Ryde–Cowes	Four services daily	Service operated by Spartan Air Lines
The Blackpool & West Coast Air Services Limited.	Liverpool (Speke)–Blackpool (Squire's Gate)–Isle of Man	Two services daily	—
Bouts-Tillotson Transport Limited	London (Hanworth)–Manchester (Barton)	Experimental operation only	Freight only
Highland Airways Limited	Aberdeen (Seaton Airpark)–Wick–Kirkwall	One service daily	—
	Inverness–Wick–Kirkwall ...	One service daily	—
Jersey Airways Limited	London (Heston)–Jersey... ...	Two services daily	—
	Southampton (Atlantic Park)–Portsmouth–Jersey	Two services daily	—
Midland & Scottish Air Ferries Limited	Glasgow (Renfrew) / Liverpool (Speke) / Belfast (Aldergrove)–Isle of Man (Castletown)–Liverpool (Speke) — Birmingham / (Castle Bromwich) / London (Romford) / Paris	Two services daily (Sunday excepted)	London (Romford)–Paris link provided by Hillman's Airways
	Glasgow (Renfrew) / Campbeltown (Strath) — Belfast (Aldergrove)	Two services daily (Sundays excepted)	—
	Islay (Duich)	One service on Mon. Wed. and Sat.	
Norman Edgar Western Airways Limited	Cardiff–Bristol (Whitchurch) ...	Four services daily	Connections with P.S. & I. of W. A. Ltd.'s services at Bournemouth
	Bristol (Whitchurch)–Bournemouth (Christchurch)	Two services daily	
Portsmouth, Southsea & Isle of Wight Aviation Limited	London (Heston) Ryde Shanklin (Apse)	Three services daily (one on Sundays). Four services daily (two on Sundays) from July 1 to August 31	Connections provided with British Air Navigation Co. Ltd.'s services from London (Heston) to Le Touquet (May 18–Sept. 17), and Deauville (July 12–Sept. 3)
—	Portsmouth–Ryde–Shanklin (Apse)	Every half hour ...	—
—	Ryde–Shanklin (Apse)–Bournemouth	Four services daily	—
—	Shoreham–Portsmouth–Bournemouth	Two services daily	Connections with Norman Edgar Western Airways at Bournemouth
—	Shanklin (Apse)–Ryde–Portsmouth–Shoreham	Two services daily	—
Provincial Airways Limited	London (Croydon)–Portsmouth–Southampton (Atlantic Park)–Bournemouth–Dorchester–Weymouth–Teignmouth–Plymouth–Hayle	Three services daily	—
Royal Dutch Air Lines	Liverpool (Speke)–Hull (Hedon)–Amsterdam	One service daily (Sundays excepted) as from June 1	Connections with Midland & Scottish Air Ferries Ltd. at Liverpool, and Continental routes at Amsterdam

The table and map which accompany this article include all the internal air services which are actually in operation at the time of going to press. The one exception is the Liverpool-Hull-Amsterdam service which does not commence until June 1. It is more than likely, however, that by the height of the summer there will be a number of important additions, for schemes are already on hand for introducing another Railway Air Services line from London (Croydon) to Belfast with a number of intermediate stops. In addition to this, demonstration flights have been given by the London, Scottish and Provincial Air Services Limited over its proposed route from London (Hanworth) to Glasgow with stops at Nottingham and Manchester. Moreover, it has been suggested that, in co-operation with the latter venture and the Royal Dutch Air Lines at Hull, that the Southern and Central Air Lines Limited should institute a service between Southampton, Nottingham, and Hull. Yet another proposal is that of the Commercial Airways of Essex for a service between Loughton, Leeds, Newcastle, Edinburgh, and Glasgow.

One or two of the services operating last year have not yet been re-started. The Hull-Grimsby air ferry for which the North Sea Aerial and General Transport Limited was responsible last year, in conjunction with the railway-associated East Yorkshire Motor Services Limited, is likely to be recommenced by another interest in the near future; the two Hillman routes from Romford to Clacton and Margate have, however, been definitely abandoned.

A photograph and brief biography of Sir Harold Hartley, Chairman of Railway Air Services Limited, are on page 881 and an editorial upon the subject generally is on page 863.

Forthcoming Events

May 19 (*Sat.*).—Permanent Way Institution (Manchester-Liverpool), at Central Station, Birkenhead, 3 p.m. Visit of Vice-President. "The Permanent Way and the Quest for Speed," by Mr. W. Hepworth.

May 23–25.—Tramways, Light Railways and Transport Association, at Southend-on-Sea. Annual Congress.

May 24–26.—Scottish Road Passenger Transport Association, at Pitlochry. Annual Conference.

May 28 (*Mon.*).—Wimbledon and District Model Railway Club, at Messrs. Miller, Swan & Co., Alt Grove, St. George's Road, London, S.W.19, 8 p.m. "Model Electrical Control Equipment," by Mr. Moody.

June 2 (*Sat.*).—Permanent Way Institution (Manchester-Liverpool). Visit to Liverpool Overhead Railway. Jubilee Dinner at St. George's Restaurant, 5, Redcross Street, 6.30 p.m.

June 4 (*Mon.*).—Indian State Railways, at Café Monico, Shaftesbury Avenue, London, W.1, 7 for 7.30 p.m. Annual Dinner.

June 6–9.—Institute of Transport, at Leeds. Annual Congress.

June 9 (*Sat.*).—Stephenson Locomotive Society. Visit to Gas Light & Coke Co.'s Works, Beckton.

June 13 (*Wed.*).—Institution of Civil Engineers, Great George Street, London, S.W.1. Conversazione.

Present Position of Chinese Railways

(*See editorial note on page* 865)

An interesting review of the present position of Chinese railways was given by Mr. D. G. M. Bernard (Acting Chairman) in his address at the recent general meeting of the British and Chinese Corporation. The Chinese railways in which the Corporation is interested experienced, with the exception of the Peking-Mukden line, more peaceful and stable conditions during 1933, and some slight progress has been made towards physical and financial recovery.

Peking-Mukden Railway

On the Peking-Mukden line, Sino-Japanese hostilities early in the year resulted in the occupation of Shanhaikuan station by Japanese and Manchukuo troops, and Chinese military occupation of the line resulted in the destruction of permanent way and bridges and restriction of traffic. Repairs were executed in June, but it was not until August that through traffic between Peking and Shanhaikuan could be resumed. The line continues to be worked in two separate divisions, the junction of which is at Shanhaikuan, where through passengers and goods have to be transhipped. From Shanhaikuan to Mukden the line is controlled by a Manchukuo administration under a railway board composed of officials of the South Manchuria Railway.

An agreement was arrived at between the two parties by which the Manchukuo Administration accepted responsibility for payment of the service of the 1899 loan. This is now made monthly from Mukden, leaving the discharge of other loans secured upon the surplus earnings to the Chinese Administration of the Peking Shanhaikuan section at Tientsin. Since the resumption of traffic from Peking to Shanhaikuan, this section of the railway inside the Great Wall has shown good returns, with a net revenue of nearly $800,000 per month. Its earning capacity even as an independent line, with transhipment of goods and passengers at Shanghaikuan, is remarkable. The approximate gross revenue for the year was $21,000,000, notwithstanding the interruptions to traffic caused by military operations. This is about $4,000,000 less than that of the previous year.

Owing to payment of loan services from Mukden in 1932, considerable surplus revenue was accumulated at Tientsin. The bulk of this was sequestrated for military purposes. During the year some assistance has been provided from the accumulated revenue to the Shanghai Hangchow Ningpo Railway to meet arrears of loan service. Negotiations for the working of the through trains over the whole system between Peking and Mukden have not yet been concluded.

Shanghai-Nanking Railway

The material damage to the Shanghai-Nanking Railway in 1932 having been made good, this line has recovered its normal working and financial stability, and the gross revenue for the year of approximately $13,500,000 shows an increase of nearly $4,000,000 over that of the previous year. The railway has, however, been forced to carry out from revenue various capital works in connection with the Nanking-Pukow train ferry and improvements in rolling-stock for the through service, and this expenditure has limited its capacity to meet its overdue financial obligations. The project for removing the main station at Shanghai to another site has been deferred for the present, and the general office building, which was destroyed by aircraft in 1932, has been rebuilt to accommodate the traffic staff. The additional rolling-stock, for the purchase of which the Corporation made an advance in 1929, has been of assistance in coping with the increased traffic requirements, and the Corporation is receiving regular monthly payments in reimbursement of its outlay. The completion of the new train ferry over the Yangtse connecting with the Tientsin Pukow railway has resulted in some improvement in revenue, and better results should follow. The finances of the line are by degrees reshaping themselves. The oldest outstanding coupon, that due in June, 1932, was paid in December last, and the dividend due to net profit subcertificate holders for 1929 paid in October. There are still, however, heavy arrears to be made up.

Shanghai-Hangchow-Ningpo Railway

On the Shanghai-Hangchow-Ningpo Railway the approximate gross revenue for the year was over $6,000,000, which is nearly the same as the previous year. Progress has been made in making up the arrears of loan service and a special reserve account of 10 per cent. of the approximate revenue, increased to 20 per cent. from June, has been established for the purpose. Some further assistance in making good the arrears in payment of the instalments of amortisation has been provided from the surplus earnings of the Peking Mukden railway, and the payment of the sum required to complete the instalment due last June was made in time to enable the drawn bonds to be paid by the end of the year. The Chinese Government is anxious that the uncompleted portion of the railway should be constructed, together with the major bridge over the Chien Tang river at Hangchow, and, if this can be done, a considerable increase in revenue could be looked for.

Canton-Kowloon Railway

With renewal of sleepers enabling an accelerated service of express trains to be worked and with new locomotives purchased through the British section of the railway and paid for by regular monthly instalments, the revenue of the Canton-Kowloon Railway has continued to improve, and there has been a small balance over working expenses. It has not, however, been possible to make any contribution to the arrears of loan service from revenue, or to institute a special reserve account for the purpose. Through connection of this line with the Canton-Hankow railway is essential for any substantial improvement in its earning capacity.

Tientsin-Pukow Railway

Although the approximate returns of revenue of the Tientsin-Pukow Railway for the year show gross earnings of over $21,000,000, about $1,000,000 more than the previous year, which should produce net revenue of at least $6,000,000, little progress has been made towards liquidating the arrears of loan service, and no satisfactory explanation has been forthcoming of the continued failure to do so. Payments to the special reserve account were suspended in January, and, although these were resumed on a small scale in July, the original schedule of the Ministry of Railways for these payments has only been completed up to April, 1933.

No progress is recorded in payment of arrears of interest upon the advances made by the Corporation in connection with the Nanking-Hunan Railway loan agreement. On the other hand, the Chinese Government has authorised the construction of certain light railways in which are to be incorporated the old Provincial undertakings. As the Corporation's advances were made for the resumption of these by the National Government, we have the strongest grounds for claiming repayment of the advances with arrears of interest.

The Ministry of Railways, by the institution of special reserve accounts on several railways and by efforts to discharge loan obligations, has given evidence of an earnest desire to restore confidence in China's respect for her obligations, but much remains to be done before this can be fully effected. Railway revenue, on which prior obligations are secured, continues to be diverted to military purposes and, impatient at delay in progress, use of this revenue has been made for fresh capital developments and for embellishment and administrative "luxuries" when the strictest economy for the railways to attain a sound financial position is necessary.

THE MONTH'S RAILWAY LAW

Law Reforms

Under the vague title "Law Reform (Miscellaneous Provisions)," the Lord Chancellor has introduced a Bill to give effect to the report of the Judges' Committee which sat recently and proposed alterations as to the effect of death upon causes of action and as to the award of interest in Court proceedings for debt recovery.

The common law rule has always been that the death of a party puts an end to a cause of action. This doctrine has been subject to several exceptions, among which are the Fatal Accidents Act, 1845, and amendments thereof, giving a right of action to the next of kin in the case of fatal accidents. Actions under this statute are frequently brought against railway companies, so that this general alteration will not much affect their position. It is to be observed that it is not proposed to repeal these Acts and rely on the provisions of the new Bill which enacts that, except in actions for defamation and seduction "all causes of action shall survive against, or as the case may be, for the benefit of the deceased person's estate."

Indeed the Fatal Accidents Acts are recognised and expressly amended by clause 2 of the Bill, which provides that an illegitimate or adopted child shall in future have the same rights in respect of his parent or parents as has the legitimate natural offspring. The clause adds that in the damages awarded in actions brought under this Act there may be added a sum for funeral expenses incurred by the parties for whose benefit the action is brought.

Clause 3 enables the Court to award interest upon money recovered as a debt or damages, between the date of action brought and the date of the judgment.

Cruising Risks

Mecredy v. *Liverpool, Brazil & River Plate Steam Navigation Company. The Times,* April 24.

The risks incidental to cruising holidays on board ship are illustrated by the evidence in this case, in which the plaintiff recovered £120 damages for personal injuries against the shipowners. Mr. Mecredy went on a sixteen day cruise to the Mediterranean last summer on the defendants' ship ss. *Voltaire*. While on board he met with an accident at the ship's swimming pool, the bed of which was a canvas sail suspended over the deck. The canvas gave way and Mr. Mecredy fell 6 ft. down on to the deck. He was taken to his cabin and was unconscious for three days. According to him his recovery was hindered by the conduct of his cabin companion, who came into the cabin the worse for drink in the early hours of the morning.

There was a clause in the contract of carriage which exempted the company from liability occasioned by the negligence of their servants. But Mr. Justice Atkinson, who tried the case at Liverpool Assizes, held that this clause contained no words sufficient to exonerate the company in this case. He found that the guard provided at the swimming pool was not adequate. It looked safe but was not safe, and he held that Mr. Mecredy, who was using the pool in the ordinary way, was entitled to recover damages for negligence.

As regards the travelling companion whom the ship-owners put to sleep in his cabin, a carrier has a duty to prevent a passenger suffering from the conduct of a fellow passenger. But this only arises where the carrier knows of the nuisance and fails to guard against it. So carriers would only be liable if they knew or were warned of the trouble and took no steps to remedy it. The law as to this was discussed in *East Indian Railway* v. *Kalidas Mukerjee* [1901] A.C. 396, in which fireworks were brought into a railway carriage illegally and exploded, injuring a fellow passenger. Here the company incurred no liability, being ignorant of the damage until it was over.

A Flat Rate for Woolworth & Co.

Railway Rates Tribunal, April 15.

The judgment of the Railway Rates Tribunal approving an agreed charge of £4 5s. per cent. of the purchase price paid by Woolworth & Co. Ltd. for the carriage of a large variety of their sixpenny articles was chiefly interesting for the grounds of opposition by other traders. The chief of these were (1) that competing traders had no means of instituting a comparison with the charges paid by them, (2) that there was no provision for adjustment at the end of the year, and therefore no assurance that Woolworth & Co. would secure no greater advantage than an agreed abatement of one-eighth, (3) that the agreed charge would subject competing traders to unfair competition, and (4) that the approval of the charge would result in widespread applications by traders for similar agreements and concessions which would have an adverse effect on the net revenues of the railway companies, and if unsuccessful would produce grievances among traders.

The Tribunal decided that the objects aimed at could not be secured by the grant of an exceptional rate under the Railways Act 1921, and that the other grounds of objection were not substantiated. As regards the detrimental effect to competing traders, this was capable of correction and alteration by action under subsection 6 of section 37 of the Road and Rail Traffic Act, 1933, which enables an aggrieved trader to apply to the Tribunal for its approval to a similar agreed rate of charge by the companies for the carriage of his own goods.

The section is hedged round with every possible protection for traders and bodies of traders who feel themselves unfairly treated, and it is satisfactory to find that the Tribunal is prepared to give its approval whenever a proposed rate seems to it reasonable.

Arbitration or the Courts?

Metzger v. *London Passenger Transport Board. The Times,* April 19.

A question as to the jurisdiction of the ordinary Courts of Law to hear an action between servants of a transport company and the London Passenger Transport Board arose in this case.

The London Passenger Transport Act, 1933, section 73, deals with the rights of officers and servants of transport companies to compensation for loss of employment, and provides that, in case of difference between the servant and the Board, claims shall be referred to the standing arbitrator.

In this case the action was brought by an omnibus conductor for damages for wrongful dismissal in July, 1933. The Judge (Mr. Justice Acton) held that the proper tribunal to try the case in view of this provision in the statute was the arbitrator, and that he himself had no jurisdiction. The point is well worth noting.

ENGINEERING PROBLEMS OF SCOTLAND'S MOST RAPID RIVER.—Mr. Alexander Newlands, who retired from the position of Chief Engineer of the London Midland & Scottish Railway in May of last year, has been consulted as to the best means of dealing with the damage caused by the river Findhorn, which recently burst its eastern bank about 1½ miles north of Forres during a flood occasioned by a rapid thaw with heavy rainfall, which occurred while the catchment area of the river was lying under a heavy snowfall. Through this breach the river flooded about 80 acres of some of the best arable land in Morayshire and over the flooded area deposited such a quantity of gravel and silt that it is doubtful if the land can be brought back to cultivation within a generation. The Findhorn, one of the most picturesque rivers in Scotland, is also the most rapid. It has a length of over 60 miles, and from source to mouth its average fall is 50 ft. a mile, while from the 1,250 ft. contour it falls at the rate of about 28 ft. a mile. This rate of fall is in excess of that on either the Dee or the Spey, one or other of which is often claimed to be the most rapid. A feature of the Findhorn is that there are no lochs in its catchment area to act as balancing reservoirs during flood: all rainfall flows directly to the river and thence to the sea. The most disastrous flood on it in relatively recent times occurred in August, 1829, and is graphically described in the "Moray Floods" by Sir Thomas Dick Lauder. During Mr. Newlands' experience as Engineer of the former Highland Railway, he was well accustomed to the impetuous vagaries of Highland rivers in flood. The disasters at Carr Bridge, due to cloudbursts in 1914 and 1923, when the main line was washed away, were recorded in our pages at the time.

RAILWAY AND OTHER MEETINGS

GREAT WESTERN OF BRAZIL RAILWAY CO. LTD.

The ordinary general meeting of the proprietors of the Great Western of Brazil Railway Co. Ltd. was held on Tuesday, May 15, at River Plate House, 12 & 13, South Place, E.C.2., Mr. G. H. Harrisson, C.M.G., M.Inst. C.E. (Chairman of the company), presiding.

The Secretary (Mr. A. J. Medlycott) read the notice convening the meeting.

The Chairman, in moving the adoption of the report and accounts, expressed the appreciation of the Directors for the services of Sir Follett Holt, K.B.E., who had been Chairman of the company since 1914, but had been forced to retire since the conclusion of the year under review owing to increasing calls on his time. Reviewing the Directors' report, the Chairman stated that the chief contributory factors to the present unsatisfactory position were lorry competition, inequitable tariff charges, exchange difficulties and the poor sugar crop of 1933. The Brazilian Government could hardly be taken to task for the failure of sugar, but in the other directions, intervention on its part was highly desirable. The present system of tariffs had enabled the lorry companies to monopolise the transport of luxury products, leaving only low-grade goods for the railway. The Government had not yet met the plea of the company for the revision of these charges. The Chairman urged the desirability of co-ordination of all transport services. He showed that an increase of 12 per cent. in cartage rates, which had been sought for by the railway, would have no effect upon the cost of living, although the proposal had been strenuously opposed by consumers. He regretted the fact that political ears appeared to be more readily attuned to the voice of the consumer than to that of the haulier. A further burden on the railway was the Government's import duty on coal and its insistence on a quota of the home product, which was of very poor quality. As a result of this the company was arranging for the use of firewood in all locomotives.

The Chairman proceeded to outline the requests transmitted to the Government on May 10 in a note from the railway. These included a proposal for a loan to permit the carrying out of essential maintenance works, for which funds were now lacking. It was suggested that repayment of the loan should come out of profits and rank after all other charges. Other requirements were adjustment and modernisation of the tariff system, Government control of lorry services regarding tariffication, and enforcement upon their operators of the tax collection for which they were responsible. The Chairman emphasised the necessity of financial assistance from the Government for maintenance works by stating that on certain sections of the railway the track had not been relaid for more than fifty years. Extensive rebuilding and strengthening of bridges which had suffered as the result of floods and other climatic conditions was also essential, although out of the question in the present state of finances.

In conclusion, the Chairman was glad to be able to state that a report from the general manager showed that traffic prospects for the latter half of 1934 were more hopeful by reason of the copious rains.

The report and accounts were unanimously adopted.

RAILWAY AND OTHER REPORTS

British Electric Traction Co. Ltd.—The revenue for the year ended March 31, 1934, amounted to £421,272. The net profit (subject to audit) amounted to £262,026, being an increase of £16,904, compared with the previous year. The directors recommend the payment of the following dividends (less income tax), viz.: 6 per cent. on the cumulative participating preference stock and a participating dividend of 2 per cent. making the full dividend of 8 per cent. (on account of which 3 per cent. has already been paid); 8 per cent. on the preferred ordinary stock (on account of which 4 per cent. has already been paid); 5 per cent. in cash on the deferred ordinary stock (on account of which 2½ per cent. has already been paid) and a bonus of 10 per cent. in fully paid £1 deferred ordinary shares; leaving a sum of £31,952 to be added to undivided profits account, making that account £1,241,231.

Nitrate Railways.—Gross receipts for the year 1933 amounted to £151,540, working expenses (including expenditure in London) to £125,708, and net receipts to £25,832. Working expenses have been debited with £6,000 (against £5,000 in 1932) for renewals, and the operating ratio is 82·95 per cent. Adding to net receipts the balance of interest and transfer fees (£33,701), and the sum of £95,886 brought forward makes a total credit to net revenue of £155,446. Against this, however, there has been charged £47,248 for income tax and exchange, leaving a balance of £107,198 which is to be carried forward.

B.S.S. for Light Railway Rails and Portable Railway Track

The British Standards Institution has issued a specification which supersedes the B.S. Specification No. 104 for Light Flat Bottom Railway Rails and Fishplates issued in 1919, and introduces a new standard for portable railway track.

This specification has been prepared by a committee representative of both manufacturers and users.

As a result of an enquiry circulated amongst the rail rollers it was ascertained that the relative demand for rails of the 10, 12, 16 and 18 lb. sections is very small, and it has accordingly been agreed to withdraw these sections from the British Standards in order to encourage more economic production by the concentration of the demand upon the 14 lb. and 20 lb. sections. In the present specification, therefore, only these two sections have been included. Experience has indicated the desirability of some modification of the dimensions of the fishplates and fishbolts and the dimensions for these as now standardised represent what has for some time been customary practice.

The standard gauge of portable railway track dealt with in this specification is 24 in. and three weights of track, ranging from 14 lb. rails on 7 lb. per yd. sleepers to 20 lb. rails on 16 lb. per yd. sleepers are standardised. The specification lays down the detailed dimensions for sleepers and fastenings, and such dimensions for assembled track and turnouts as are essential to secure interchangeability of sections. One important feature is the adoption of a standard flangeway clearance for turnouts, though provision is made for alternative clearances where these are necessary to suit the wheel-back dimensions of existing rolling stock.

Copies of this specification (B.S.S. No. 536-1934) may be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. 2d. post free.

CANADIAN RAILWAY UNIFICATION.—Mr. E. W. Beatty, presiding at the recent annual meeting of the Canadian Pacific Railway Company, reiterated his belief that the unification of the Canadian Railway systems for purposes of administration was the only adequate solution of Canada's railway problem. The present railway structure involved the economic waste of many millions of dollars annually. Under the suggested scheme of unification ownership of the Canadian National Railways would remain with the Government and ownership of the Canadian Pacific Railways with the present proprietors. The suggestion was in effect a partnership with division on an agreed basis of the earnings of the properties jointly operated. Unification would not lead to monopoly.

NOTES AND NEWS

Southern Railway Bill.—This Bill, which has already been through the House of Commons, was read a second time and committed in the House of Lords on May 15. No petitions have been deposited against it in the Second House.

L.M.S.R. Bill.—This Bill came on Thursday, May 10, before the Unopposed Bills Committee of the House of Commons and was reported for third reading, with amendments. The measure provides for the construction of a railway about half a mile in length to form a connecting link between the old Midland and North Western lines at Hazel Grove, near Stockport, and for the acquisition of additional lands. These are situate mainly in the County of Essex and are required for widening and developing the Southend line. The other lands required adjoin the railways of the Company near Watford, and in the Liverpool and Manchester districts, to be used for goods traffic accommodation.

Irish Railway Wages.—Dublin members of the National Union of Railwaymen at a meeting on May 13 passed a resolution instructing the Executive to refuse the application of the Great Southern Railways for a further cut in wages, even to the point of withdrawing labour if necessary. The proposed additional cut would be 2½ per cent. for men with over £2 a week, and would bring the total cut up to 10 per cent. This is the cut recently arranged with the Northern Ireland and cross-border railways, but it was considered that the Great Southern was in a different position from those companies.

Agreed Charges.—The Railway Rates Tribunal gave judgment on May 15 on an application by the four amalgamated companies and the London Passenger Transport Board, approving an agreed charge of 2s. a pig or such sum a pig as would (after the deduction of derating allowance) produce a net sum of 1s. 8d. a pig, whichever was the lower, for the period March 1 to December 31, 1934. The charge has been agreed with the registered bacon curers and their agents. The traders agree to hand to the railway companies the whole of the traffic, other than pigs produced at places not more than five miles from the curers, and the charge applies to the carriage of live pigs from any railway station in Great Britain serving the curer's factory. In giving judgment approving the charge, the President (Mr. W. Bruce Thomas, K.C.) said it was estimated that more than half of the total pig traffic passing to curers in Great Britain was being conveyed by road; that the total number of pigs contracted to be sold to bacon curers in the period March 1 to December 31, 1934, was about 1,380,000; that it was anticipated that under future contracts this total was likely to be exceeded, since the capacity of the existing bacon factories was upwards of three millions per annum, and that approximately nine-tenths of the total pig traffic passing to the registered bacon curers would be carried by railway if the agreed charge were approved.

Town Plans at L.N.E.R. Stations.—The L.N.E.R. has recently been co-operating with town authorities with a view to a plan of the town being fixed at the principal railway stations. Some 48 town plans have already been placed on exhibition, three more are in course of preparation, and it is hoped eventually to have a town plan at every station of importance.

Structural Engineers' Conference.—A summer conference of the Institution of Structural Engineers has been arranged to take place at Bath from June 6 to 8. The headquarters of the conference will be at the Pump Room, Bath. The institution banquet will be held in the Banqueting Room, Guildhall, at 7.45 p.m., on June 7. Inquiries concerning the conference should be addressed to the Secretary, 10, Upper Belgrave Street, S.W.1.

"Cross Crossings Cautiously."—Accidents at railway crossings in Canada have been almost halved in one year as the result of an intensive campaign waged under the slogan "Cross Crossings Cautiously" by the railway companies and various safety organisations. Motorists, however, still figure prominently in accidents at crossings, states the Canadian National Railways, and there has been no reduction in the number of cases where reckless drivers have ignored watchmen's signals, crashed through closed crossing gates and charged their cars into the sides of passing trains anywhere between ten and twenty carriage lengths behind the engine.

Hull-New Holland Ferry Service.—Negotiations which have for sometime been taking place between the L.N.E.R. and the Hull Corporation for the improvement of the ferry service between New Holland and Hull, have now been satisfactorily concluded, and the Hull Corporation has submitted a scheme to the Ministry of Transport, under the Public Works Facilities Act, for the improvement of the Victoria pier at Hull, and the building of a new landing stage there. The Directors of the L.N.E.R. have authorised a considerable expenditure on the provision of similar improved terminal facilities at New Holland. The pier head will be reconstructed, and a floating pontoon, connected to the pier head by a covered hinged bridge, will also be built. At the same time the L.N.E.R. has placed an order with William Gray & Co. Ltd., West Hartlepool, for two steel paddle steamers for the ferry service. These will be of the latest design, and considerably faster than the present fleet, and although delays caused by fog and the shifting channels in the Humber will not be eliminated, the ferry service should be greatly improved. The steamers will have larger deck space for cargo and motor vehicles, and the new landing stages, which will rise and fall with the tide, will enable vehicular traffic to be dealt with more easily and quickly, and obviate the present need for cranage at the Victoria pier.

Summer Time in Canada.—Summer time as such in Canada is not recognised in the summer time-tables of the Canadian National Railways, which operates its train services throughout the year on standard time. In order, however, to meet the convenience of city workers holding season tickets the arrival and departure times of suburban trains are altered instead of the station clocks. Summer time is not generally observed in Canada, being adopted mainly by eastern cities by municipal regulation only.

Closing a Cork Light Railway.—Mr. Lemass (Irish Free State Minister for Industry and Commerce), replying to a parliamentary question, said that he had received notice of the intention of the Great Southern Railways Company to close down the Cork-Muskerry & Donoughmore Light Railway, and that he had received representations from the Cork County Council requesting him to hold a preliminary inquiry into the matter. The Act under which an Order authorising the discontinuance of the train service would be made did not provide for an inquiry of that character.

London Transport Bill.—A Select Committee of the House of Commons, presided over by Mr. Annesley Somerville, began on May 15 to consider the London Passenger Transport Bill, which principally provides for trolleybus services on 85 miles of route. The Transport Board already runs trolleybuses on 18 miles in the Kingston neighbourhood. Appearances were entered on only about 12 out of the 74 petitions originally deposited against the Bill. The petitioners appearing were mainly against particular routes, and not against the general principle except in the case of the Automobile Association and the Royal Automobile Club. The proposal most heavily opposed was the scheme for substituting trolleybuses for tramways on the greater part of the routes from Enfield to the junction of Euston Road and Tottenham Court Road, and running trolleybuses down Tottenham Court Road, with a turning service through Bedford Square. It was made clear in the opening address of Mr. Tyldesley Jones, K.C., counsel for the promoters, and in the evidence of Mr. Frank Pick, Vice-Chairman of London Transport, that the board had no intention of generally scrapping tramways, and that where it was proposed to substitute trolleybuses, they could make use of much of the existing tramway equipment. To substitute buses

entirely for tramways would mean not only scrapping all that equipment, but also involving the board in heavy compensation payments. The trolleybus was very flexible and had the advantage of being able to draw up to the pavement. The latest type would hold 73 passengers, and the largest tramcars 78 passengers. Consideration of the Bill was continued on Wednesday and yesterday.

German Railway Accident.—As a result of the derailment of a Hanover-Bremen express at Verden near Hanover, on Wednesday, three persons are reported to have lost their lives. The train caught fire after derailing.

Joining the Turkish and Iraq Railways.—According to a press report from Istanbul, the Turkish Government is credited with planning to join the Turkish and Iraq Railways by a line from the Sivas Railway to the Iraq system.

Signal Engineers' Meeting.—Members of the Institution of Railway Signal Engineers will visit Cardiff and inspect the all-electric power signalling installation at Cardiff general station on June 15 and 16, the dates of the annual general meeting. The party will also tour the docks in a G.W.R. vessel. The institution dinner and dance will be held at the Royal Hotel, St. Mary Street, Cardiff, on the evening of June 15.

New G.W.R. Railway Stations.—The G.W.R. has decided to build a new station at Trelewis, the mining village of about 3,000 inhabitants situated between Nelson and Treharris. in South Wales. Work is to begin immediately. The G.W.R. has also announced that work is to begin at once on a new halt at Sedbury Lane, Tutshill, near Chepstow. This halt, to be called Tutshill for Beachley, is to be erected near the junction of the Wye Valley line and the main line to Gloucester.

L.M.S.R. (London) Amateur Dramatic Society's Production.—A performance of John Van Druten's popular comedy of office life, "London Wall," was given by the Society on Monday last at the Cripplegate Institute, under the direction of Mr. W. F. Humphreys. The story, which takes place on the premises of Messrs. Walker, Windermere & Co., solicitors, might have been written of any office, but the authentic legal atmosphere was created by Gretchen Kamm as Miss Bufton, Lucy Sander as Miss Hooper, and William E. Shorey as Birkinshaw, the office boy. Old Mr. Walker, played by James Proudley, said that business and private life should not be mixed, but Arthur E. Lloyd as Eric Brewer, the senior clerk, did not believe it. However, the less sophisticated attractions of S. B. A. Sampson, as Hec Hammond, were too much for him when he had designs on Pat Milligan, played by Eileen Pyne. The eccentricities of Doris Brooks as Miss Willesden, and the cynical indifference of K. Myrra Collins as Miss Janus, a girl who loved too well, were exceedingly clever.

Diesel Trials in France.—Under the supervision of M. Raoul Dautry, General Manager of the French State Railways, the French Automobile Club is now carrying out trials in its laboratory at Cachan, on the various diesel engines which are being used in railcars on the seven big French railways. Nineteen engines are to be tested, and they are divided into four classes for the purposes of trial. A full report will be issued at the conclusion of the tests.

Nitrate Railways Improved Results.—At the annual general meeting on Wednesday of the Nitrate Railways Co. Ltd., it transpired that receipts to the end of April had amounted to £104,983—so that, as Mr. A. W. Bolden, the Chairman, expressed it, "they could anticipate a material improvement in gross earnings this year, but the effective surplus on the year's working would depend almost entirely on the question of exchange, and whether they were obliged to continue to work to the official rate, which to-day was only about 40 per cent. of the export or open rate." A summary of the report will be found on page 888.

High Speed Trains for America.—A sum of $900,000 has been allotted by the Public Works Administration to the Baltimore & Ohio Railway to enable it to put into operation two high-speed lightweight trains. Each train will consist of six cars and a locomotive, and four additional cars will be built for reserve. A diesel-electric locomotive of 1,800-h.p. is to be built for operating one of these trains and an existing 4-4-4 steam locomotive with 7 ft. driving wheels is to be adapted by the company for operating the other train. This locomotive will work at 350 lb. per sq. in. boiler pressure. Both locomotives and coaches will be streamlined. Half of the cars are to be built of aluminium alloy and half of special corrosion-resisting high-tensile steel. All the cars will be completely air-conditioned. It is understood, states Reuter, that they will run between Washington and Jersey City, as an answer of the B. & O. to electrification and other improvements now being carried out by the Pennsylvania Railroad between New York and Washington.

Electricity Supply to Railway Companies.—When the Electricity (Supply) Bill (H.L.) was considered on report in the House of Lords, on May 14, a series of amendments was moved to Clause 4, which provides for the supply of electricity by the Central Electricity Board to railway companies, so as to provide additional safeguards for authorised undertakers and against the possibility of railway companies obtaining power at uneconomic rates. The Earl of Plymouth, in objecting to the amendments on behalf of the Government, said that there were very definite words in the Bill to the effect that the supply of electricity should be upon terms and at prices which would not result in a financial loss to the Central Electricity Board. Moreover the board had no power to enter into any agreement for supply of electricity to a railway company for use within the area of supply of any authorised undertakers who owned a selected station without the consent of those undertakers. These amendments were withdrawn or negatived, as were also amendments providing for compensation to authorised undertakers.

Southern Railway Holiday Posters.—Our old friend Sunny South Sam makes a welcome reappearance in one of the new coloured posters which the Southern Railway is issuing in connection with the forthcoming holiday season. He is seen proudly chalking up a Meteorological Office statement that the first 22 resorts in the 1933 sunshine statistics were *all* among those served by the Southern Railway. A colourful companion picture stresses the fact and tabulates the names of the resorts in question. The sunshine "note" and colouring are also very effectively used in a couple of smaller posters; whilst a Southern Electric bill, showing a Bright Young Person awaiting the arrival of his inamorata, is at once amusing and attractive. Very pleasing too is the view of the Seine which appears on a picture-letterpress poster, advertising the company's midget cruises to France by the ss. *St. Briac*.

Inter-Railway Ambulance Competition.—The 33rd annual competition for the Inter-railway challenge shield of the St. John Ambulance competition, which took place at the Great Central Hotel, Marylebone, on May 15, attracted a large number of spectators. The contest was well staged, and the nine teams participating were those selected from over 1,000 teams by the annual series of competitions organised by the respective railway companies. The adjudicators were Captain A. C. White Knox, M.C., M.B., of London, for the team test and Lieut.-Col. M. MacEwan, D.F.C., M.B., of Ipswich, for the individual work. The team test was of a spectacular character, representing an aeroplane crash, and the competing teams dealt with the disaster in most competent fashion. Among the onlookers were :—

Sir Josiah Stamp, G.B.E., D.Sc., President of the Executive, L.M.S. Railway, who was accompanied by Lady Stamp; Sir Ralph Wedgwood, Chief General Manager, L.N.E.R.; Mr. H. T. Bailey, Director, L.N.E.R.; Mr. J. F. Lean, Principal Assistant to the General Manager, G.W.R.; Mr. G. S. Szlumper Assistant General Manager, Southern Railway; Mr. G. L. Darbyshire, Chief Officer for Labour and Establishment, L.M.S.R.; Mr. W. E. C. Lazenby-Assistant Officer for Labour and Establishment L.M.S.R.; Mr. A. Maynard, Chief Goods Manager, G.W.R.; Dr. H. Cavendish Fuller, Chief Medical Officer, G.W.R.; Mr. W. G. Pape, Assistant to General Manager, Southern Railway; Mr. A. S. Mills, District Goods Manager, London, G.W.R.; and Mr. W. E. Baines, Locomotive Superintendent, G.W.R., Newport.

The presentation proceedings were presided over by Lieut.-General Sir Aylmer

Hunter-Weston, K.C.B., Chancellor of the Order of St. John, and the result of the competition was announced by the Secretary-General of the Order, Major-General Sir Percival Wilkinson, K.C.M.G., C.B., as follows :—

		Marks
1st.	G.W.R., South Lambeth (Challenge Shield)	413
2nd.	L.M.S.R., Crewe Machine Shop (Corbet Fletcher Cup)	388
3rd.	Southern Railway, Horsham ...	385
4th.	L.N.E.R., Dukinfield Works ...	384½
5th.	Southern Railway, Waterloo B. ...	376
6th.	G.W.R., Pontypool Road	360½
7th.	Cheshire Lines Committee... ...	359⅛
8th.	L.N.E.R., Parkeston and Harwich	350
9th.	L.M.S.R., Accrington Loco. ...	310

The chairman referred to the great interest taken by the heads of the railway world in ambulance work, which was of real value to the railways and to the State. Presenting the awards, Sir Josiah Stamp said that first-aid work was a very remarkable movement throughout the whole of the railway service. There were at the present time no fewer than 25,000 railwaymen holding high ambulance qualifications. There was, he said, nothing but the finest spirit of competition and the best spirit of British sportsmanship throughout the contest. Sir Josiah then handed the challenge shield to the captain of the Great Western Railway (South Lambeth) team, the Corbet Fletcher cup to the runners-up, Crewe, and prizes to individual members of the teams. The Pontypool Road (G.W.R.) team received a tablet commemorating its winning of the trophy in the 1933 contest. A vote of thanks to the Order of St. John for its encouragement of ambulance work throughout the railways was carried enthusiastically.

United of Havana Moratorium.—The Stockholders' Committee of the United Railways of the Havana & Regla Warehouses Limited, in the exercise of the powers granted under Clause 2 of the scheme of arrangement, dated June 7, 1932, has extended for a further period of one year the operation of the scheme of arrangement dated June 27, 1930, as amended by the scheme of June 7, 1932.

British and Irish Railway Traffic Returns

GREAT BRITAIN	Totals for 19th Week			Totals to Date		
	1934	1933	Inc. or Dec.	1934	1933	Inc. or Dec.
L.M.S.R. (6,940¾ mls.)	£	£	£	£	£	£
Passenger-train traffic...	420,000	405,000	+ 15,000	7,502,000	7,457,000	+ 45,000
Merchandise, &c. ...	458,000	438,000	+ 20,000	8,451,000	7,655,000	+ 796,000
Coal and coke ...	206,000	204,000	+ 2,000	4,819,000	4,539,000	+ 280,000
Goods-train traffic ...	664,000	642,000	+ 22,000	13,270,000	12,194,000	+1,076,000
Total receipts	1,084,000	1,047,000	+ 37,000	20,772,000	19,651,000	+1,121,000
L.N.E.R. (6,339 mls.)						
Passenger-train traffic...	265,000	256,000	+ 9,000	4,861,000	4,845,000	+ 16,000
Merchandise, &c. ...	313,000	285,000	+ 28,000	5,986,000	5,272,000	+ 714,000
Coal and coke ...	223,000	199,000	+ 24,000	4,618,000	4,133,000	+ 485,000
Goods-train traffic ...	536,000	484,000	+ 52,000	10,604,000	9,405,000	+1,199,000
Total receipts	801,000	740,000	+ 61,000	15,465,000	14,250,000	+1,215,000
G.W.R. (3,750 mls.)						
Passenger-train traffic...	174,000	173,000	+ 1,000	3,146,000	3,180,000	— 34,000
Merchandise, &c. ...	183,000	175,000	+ 8,000	3,369,000	3,053,000	+ 316,000
Coal and coke ...	92,000	99,000	— 7,000	2,018,000	1,962,000	+ 56,000
Goods-train traffic ...	275,000	274,000	+ 1,000	5,387,000	5,015,000	+ 372,000
Total receipts	449,000	447,000	+ 2,000	8,533,000	8,195,000	+ 338,000
S.R. (2,177 mls.)						
Passenger-train traffic...	256,000	249,000	+ 7,000	4,691,000	4,656,000	+ 35,000
Merchandise, &c. ...	66,500	63,000	+ 3,500	1,157,000	1,104,000	+ 53,000
Coal and coke ...	27,500	25,000	+ 2,500	652,000	597,000	+ 55,000
Goods-train traffic ...	94,000	88,000	+ 6,000	1,809,000	1,701,000	+ 108,000
Total receipts	350,000	337,000	+ 13,000	6,500,000	6,357,000	+ 143,000
Liverpool Overhead ... (6¼ mls.)	1,093	1,114	— 21	20,407	19,949	+ 458
Mersey (4½ mls.) ...	4,191	3,795	+ 396	79,348	75,748	+ 3,600
*London Passenger Transport Board ...	541,600	—	—	22,659,700	—	—
IRELAND						
Belfast & C.D. pass. (80 mls.)	1,783	1,835	— 52	35,140	35,811	— 671
" " goods	525	659	— 134	10,233	10,074	+ 159
" " total	2,308	2,494	— 186	45,373	45,885	— 512
Great Northern pass. (562 mls.)	7,700	6,850	+ 850	142,900	75,900	+ 67,000
" " goods	8,750	8,850	— 100	157,000	81,800	+ 75,200
" " total	16,450	15,700	+ 750	299,900	157,700	+ 142,200
Great Southern pass. (2,168 mls.)	18,711	18,742	— 31	369,500	359,299	+ 10,201
" " goods	35,137	33,036	+ 2,101	616,652	591,727	+ 24,925
" " total	53,848	51,778	+ 2,070	986,152	951,026	+ 35,126

* 45th Week.

British and Irish Railway Stocks and Shares

Stocks	Highest 1933	Lowest 1933	Prices May 16, 1934	Prices Rise / Fall
G.W.R.				
Cons. Ord. ...	55½	31	56½	+1
5% Con. Prefce. ...	109¾	69½	110½	—
5% Red. Pref. (1950)	109¼	87½	109½	—
4% Deb.	108 15/16	99¼	108½	—
4½% Deb.... ...	108	100¾	110½	—
4½% Deb.... ...	116	106	117½	—
5% Deb.	128	117¼	128½	—
2½% Deb.... ...	65	60	69½	—
5% Rt. Charge ...	124	111½	126½	—
5% Cons. Guar. ...	122	103	123½	—
L.M.S.R.				
Ord.	29⅞	12⅛	25½	+½
4% Prefce. (1923)	51	17	54½	+1
4% Prefce. ...	72	33¼	79	+1½
5% Red. Prf. (1955)	93	47¼	99	—
4% Deb.	103¼	89½	103½	+½
5% Red. Deb. (1952)	114	105	111½*	—
4% Guar.	97¼	68⅜	99	+½
L.N.E.R.				
5% Pref. Ord. ...	22½	7¾	19¾	+¾
Def. Ord.	10¾	4⅛	9⅜	−⅛
4% First Prefce. ...	65½	19⅝	69	+2
4% Second Prefc .	40½	12¼	38	+1½
5% Red. Pref. (1955)	83¾	27	87	—
4% First Guar. ...	94¾	58¼	96	—
4% Second Guar.	89¼	48	90½	+½
3% Deb.	77	60¼	78	—
4% Deb.	102¾	80	102½	+½
5% Red. Deb. (1947)	112	102½	108½	—
4½% Sinking Fund Red. Deb.	107½	98¾	106½	—
Southern				
Pref. Ord.... ...	71	27¾	79	+3
Def. Ord.	24⅜	9⅝	27½	+1½
5% Prefce. ...	107 11/16	74	110½	—
5% Red. Pref. (1964)	107¾	78⅞	111½	—
5% Guar. Prefce.	124⅛	102¾	124½	—
5% Red. Guar. Pref. (1957)	115⅝	103½	115½	—
4% Deb.	107½	96¾	106½	+1
5% Deb.	126½	114¼	126½	—
4% Red. Deb. 1962–67	107¼	100	107½	+1
Belfast & C.D.				
Ord.	6	4	5	—
Forth Bridge				
4% Deb.	99½	95½	101½	—
4% Guar. ...	98½	94	101½	—
G. Northern (Ireland)				
Ord.	7½	3½	5	—
G. Southern (Ireland)				
Ord.	28	16	20	—
Prefce.	24	12⅛	15⅛	—
Guar.	42	16¾	40	−3
Deb.	60	30⅞	59½	−½
L.P.T.B.				
4½% "A" ...	117⅞	112	118½	—
5% "A"	127¼	119¼	128½	—
4½% "T.F.A." ...	111¼	106	109½	—
5% "B"	122½	114	123½	+1
"C"	86¾	74½	79½	+1
Mersey				
Ord.	16¼	5	15	—
4% Perp. Deb. ...	83	63⅞	87½	—
3% Perp. Deb. ...	62	51	65½	—
3% Perp. Prefce....	50⅛	27	53½	—

* ex-dividend.

CONTRACTS AND TENDERS

Howell & Co. Ltd. has received an order from the Buenos Ayres Western Railway for 1,200 Aquacidox steel boiler tubes.

J. Parkinson & Son Ltd. has received an order for one universal milling machine from the Buenos Ayres Great Southern Railway.

Yates Improved Rail Anchor Co. Ltd. has received an order from the Peruvian Corporation for 10,000 Improved type rail anchors.

Richard Dunston Limited has received an order from the L.N.E.R. for two steel screw steam paddle tug boats for service in the fish docks at Grimsby.

Craven's Railway Carriage & Wagon Co. Ltd. has received an order from the Parkgate Iron & Steel Co. Ltd. for 50 12-ton wagons.

The Churchill Machine Tool Co. Ltd. has received an order from the Buenos Ayres Western Railway for one model AJB axle journal regrinding machine with turning equipment.

George Spencer Moulton & Co. (India) Ltd. has secured a flat rate contract from the Indian Stores Department for the supply of broad gauge side buffer recoil springs at Rs. 0-3-10·5 each f.o.r. Calcutta.

The Hydraulic Coupling & Engineering Co. Ltd., of Isleworth, has just received an order for 43 Vulcan-Sinclair traction-type fluid couplings for use on 20 diesel railcars, each with two 130 b.h.p. engines, which are being built by the Soc. Italiana Ernesto Breda, of Milan, for the Italian State Railways. The three odd units are being acquired as spares.

Central of Brazil Electrification

The President of Brazil has signed a decree authorising work to proceed on a £3,000,000 contract awarded to the Metropolitan-Vickers Electrical Co. Ltd. for electrification on the Central Brazil Railway. Reference to this contract was made in this column of THE RAILWAY GAZETTE for June 30, 1933. The signing of this decree is the final stage in the negotiations as far as the Government of Brazil is concerned, and it now remains only for the technical details to be settled.

The Madras & Southern Mahratta Railway has placed orders for 640 pairs of wagon wheels and axles as follow :—

Craven's Railway Carriage & Wagon Co. Ltd.: 200 pairs, broad gauge.

O'Hara Murray & Co. Ltd., as agents for Maschinenfabrik Rhein Metall A.-G.: 210 pairs, broad gauge.

F. Suren, as agent for Ruhrstahl A.-G.: 200 pairs, broad gauge and 30 pairs, metre gauge.

The Clarkson Thimble Tube Boiler Co. Ltd. has received an order for two Clarkson contra-flow boilers for heating the passenger compartments of a three-car diesel train with two 130 b.h.p. Leyland engines, with Lysholm-Smith hydraulic torque-converters, which is now under construction by the Northern Counties Committee of the L.M.S.R. for the Belfast-Portrush service. The same company has just supplied two thimble-tube boilers for use in two railcars on the Northern Railway of Spain.

Indian Signalling Contract

The General Railway Signal Co. Ltd., has secured a contract to the value of Rs. 3,20,051 (£24,000), for the supply to the East Indian Railway of an all-electric power interlocking signal installation in replacement of the existing electro-pneumatic plant at Howrah. This contract consists of the supply of one 88 lever frame, together with 60 two- and three-aspect colour-light signals, 73 all-electric point machines, 500 a.c. and d.c. relays and all other necessary equipment.

Associated Electrical Industries (India) Limited has secured an order from the Indian Stores Department for a motor generator set at Rs. 931, a Star Delta starter for 16 h.p. motor at Rs. 278, a generator panel set at Rs. 520 and a battery charging panel set at Rs. 950, f.o.r. Bombay.

Further to the recent call for tenders by the Great Indian Peninsula Railway for locomotive, carriage and wagon parts and fittings, the following orders have now been placed :—

The Solem Hardware Mart: Flanged copper firebox back and tube plates for locomotives, items Nos. 1–17, to be manufactured by Osnabrucker Kupfer Drahftwerke, Germany, and/or Trefellieries de Laminoire du Havre, Paris.

Heatly & Gresham Limited: Flanged copper tube plates for locomotive fireboxes, items Nos. 12 and 13, to be manufactured by Usines a Cuivre et a Zinc de Liege, Belgium; Lock nuts, items 18–21, to be manufactured by The Dart Spring Company, West Bromwich.

O'Hara Murray & Co. (India) Ltd.: Flanged copper backplates for locomotive fireboxes, items Nos. 14 and 15, to be manufactured by Vereinigte Deutsche Metallwerke A.G. (including associated works, C. Heckmann), Duisburg.

Daw & Company: Flanged copper back plates for locomotive fireboxes, item No. 3, to be of O.K.D. or any other equally good Continental make approved by the Director-General, India Store Department, London.

Tenders are invited on a rupee basis for the purchase by the North Western Railway of India of three ZF type tank locomotives, 2 ft. 6 in. gauge. Tenders are receivable at the Agents' Office, Lahore, by June 28. Drawings may be viewed at the office of Hodges Bennett & Co. Ltd., 16, Victoria Street, Westminster, S.W.1. These engines are of the 2-6-2 wheel arrangement with 2 ft. 6 in. coupled wheels, 180 lb. per sq. in. boiler pressure, 14 in. by 16 in. outside cylinders, and total weight approx. 39·5 tons in working order.

Alex. Friedmann has received an order from the Egyptian State Railways Administration for injectors at a total cost of £460 6s. for delivery f.o.b. Trieste. Ref. No. E.S.R. 21.98, adjudication of February 15; three offers received.

Further to the announcement published in this column of our issue for March 30 that Sir W. G. Armstrong, Whitworth & Co. (Engineers) Ltd. had secured an order for two 1,300-b.h.p. diesel-electric locomotives for the North Western Railway of India, the total value of this contract is Rs. 6,61,596 f.o.r. Karachi and including cost of reliability and endurance tests.

Alfred Herbert Limited has received orders from the Buenos Ayres Great Southern Railway for the following machines :—One 9-in. circular cold sawing machine, one No. 20 combination turret lathe, two No. 9 combination turret lathes, two No. 4 capstan lathes, one Lumsden No. 71-LMO vertical spindle surface grinder, and one vertical milling machine.

Fried. Krupp A.G. has received an order from the Egyptian State Railways Administration for 110 engine and tender tyres of sizes from 3 ft. 1⅝ in. to 4 ft. 6⅞ in., at a total price of £764 17s. 6d., delivered f.o.b. Rotterdam–Antwerp. Ref. No. E.S.R. 21.123, adjudication of April 3; 19 offers received.

Hull—New Holland Ferry Service

Considerable improvements are contemplated to the Hull–New Holland ferry service of the L.N.E.R. Two steel paddle steamers have been ordered and the terminal facilities at New Holland and Hull are to be extended. Further details are given in a news paragraph on page 889. The new vessels will be considerably faster than the present fleet, and although delays caused by fog and the shifting channels in the Humber will not be eliminated, the ferry service should be greatly improved. The new steamers will have larger deck space for cargo and motor vehicles than the existing craft.

The Crown Agents for the Colonies have recently placed orders for equipment as follow. In several instances more extended reference has already been made to these in this column.

J. M. Henderson & Co. Ltd.: Aerial cableway.
Alley & MacLellan Limited: Air compressor.
Head Wrightson & Co. Ltd.: Bridgework.
Callenders' Cable & Construction Co. Ltd.: Telephone cable.
Le Carbone Limited: Carbon electrodes.
Watts, Watts & Co. Ltd.: Steam coal.
T. Bolton & Sons Ltd.: Copper ingots.
Glasgow Steel Roofing Co. Ltd.: Sliding doors.
Churchill Machine Tool Co. Ltd.: Grinding machine.
Ferranti Limited: Meters.
C. C. Wakefield & Co. Ltd., F. How & Co. Ltd., and The Vacuum Oil Co. Ltd.: Oil.
D. L. Flack & Son Ltd.: Patent fuel.
Turners Asbestos Cement Company: Asbestos pipes.
P. & M. Co. (England) Ltd.: Rail anchors.
United Steel Co.'s Ltd.: Rails and fishplates.
Metropolitan-Cammell Carriage, Wagon & Finance Co. Ltd.: Coaches.
Butler Machine Tool Co. Ltd.: Slotting machine.
A. & J. Main & Co. Ltd.: Steel.
P. & W. MacLellan Limited: Steelwork.
Dorman Long & Co. Ltd.: Steel and ironwork.
Wolverhampton Corrugated Iron Co. Ltd.: Corrugated steel sheets.
General Electric Co. Ltd.: Telephone apparatus.
Taylor Bros. & Co. Ltd., Steel Peech & Tozer Limited, and J. Baker & Bessemer Limited: Tyres.
Birmingham Railway Carriage & Wagon Co. Ltd.: Goods wagons.
Chas. Roberts & Co. Ltd.: Oil tank wagons.
Whitecross Co. Ltd.: Copper wire.

The Delaware, Lackawanna & Western Railroad has placed orders for about $4,000,000-worth of new equipment, as follows: 20 locomotives from the American Locomotive Company, 350 steel hopper cars from the

OFFICIAL NOTICES

Port of London Authority

APPLICATIONS are invited for the position of Railway Superintendent to supervise the working of the Authority's Railways. Salary £550, rising for approved service by annual increments of £25 to £650 per annum inclusive. Candidates should not be over 45 years of age and must have had practical experience in handling and controlling railway traffic and staff under Dock conditions.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, should be sent to the Establishment Officer, Port of London Authority, Trinity Square, London, E.C.3, and must be received not later than the 31st May, 1934.

Canvassing by or on behalf of the candidate will disqualify.

J. D. RITCHIE,
Secretary.

Port of London Authority,
E.C.3.

South Indian Railway Company Limited.

THE Directors are prepared to receive Tenders for the supply of:—

SOLID DRAWN STEEL BOILER TUBES.

Specifications and Forms of Tender will be available at the Company's Offices, 91, Petty France, Westminster, S.W.1.

Tenders, addressed to the Chairman and Directors of the South Indian Railway Co. Ltd., marked "Tender for Steel Boiler Tubes," with the name of the firm tendering, must be left with the undersigned not later than 12 noon on Friday, the 1st June, 1934.

The Directors do not bind themselves to accept the lowest or any Tender.

A charge, which will not be returned, will be made of 2s. 6d. for each copy of the Specification.

A. MUIRHEAD.
Managing Director.

91, Petty France,
Westminster, S.W.1.

The Chinese Government Purchasing Commission

THE Commission is prepared to receive Tenders from British manufacturers only for the supply of:—

14 4-8-4 Type LOCOMOTIVES with TENDERS,
2 0-8-0 " " "

Tender Forms can be obtained at the offices of the Consulting Engineers, MESSRS. SANDBERG, 40, Grosvenor Gardens, London, S.W.1.

A non-returnable fee of £2 10s. will be charged for each set of documents.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

American Car & Foundry Company, 150 hopper cars from the Magor Car Company, two oil-electric locomotives from General Motors, and two oil-electric locomotives from Ingersoll-Rand. Deliveries will begin during the summer, according to Reuters. The locomotives from the American Locomotive Company will be constructed at the company's Schenectady plant and are for fast freight services.

The South African Railways and Harbours Administration has placed orders as follow:—

Kitson & Co. Ltd. and Ruhrstahl A.G.: Dome bases and angle rails at prices of £115 10s. and £120 3s. respectively (Ref. No. B5967).

Waterlow & Sons: Passenger tickets at price of £455 0s. 3d. (Ref. No. A7053).

Diesel Cars for India.

The six diesel-electric railcars ordered by the Madras & Southern Mahratta from Sir W. G. Armstrong-Whitworth & Co., (Engineers) Ltd., as recorded in our issue of May 4, are to be fitted with bodies built in India. The cars are to be 69 ft. long and will weigh approximately 32 tons when loaded with 112 passengers, all of whom are carried in one class. The engine is to be a 135-140 b.h.p. Armstrong-Saurer unit, with A.B.E. patent control. Multiple-unit operation is being provided for, and air brakes are to be fitted.

With reference to the call for tenders by the Egyptian State Railways Administration for motor buses and chassis (adjudication of March 17, 1934; reference number E.S.R. 55.2.18), the Administration states that it is desired that tenderers should extend the validity of their offers after the date stated in the specification in order to make closer examination. Tenderers are therefore asked not to withdraw their provisional deposits unless they decline to extend validity of their offers.

The Egyptian State Railways Administration invites tenders, receivable at the office of the Superintendent of Stores Department, Saptieh, Cairo, by June 19, for the supply of 29,000 I.R. stops for windows. Tenders are also invited, receivable by June 21, for the supply of 140 tyres for wagon bogies.

The Egyptian State Railways Administration invites tenders, receivable in the Inspecting Engineer's Office, 41, Tothill Street, S.W.1, for 100 buffers complete, and 20 cast-steel axleboxes.

The Chinese Government Purchasing Commission invites tenders, as stated in our Official Notices section above, for the supply of 14 4-8-4 type and two 0-8-0 type locomotives and tenders. Messrs. Sandberg, 40, Grosvenor Gardens, London, S.W.1, are the consulting engineers.

The Ministry of Finance, Survey of Egypt, is calling for tenders, to be presented in Giza (Mudiriya) by July 9, for the supply of light and heavy new or second-hand rails. Firms desirous of offering rails of United Kingdom manufacture can obtain the further details from the Department of Overseas Trade.

Tenders are invited, receivable in the Agent's office, East Indian Railway, 105, Clive Street, Calcutta, by June 6, for an electrically-driven multiple punching machine for tie-bars and cotters.

The Chief Controller of Stores, Indian Stores Department (Engineering Section), invites tenders, receivable by June 5 for an hydraulic rotating lift for commercial motor vehicles, 4 tons capacity, required for the North Western Railway at Moghalpura.

The Great Southern Railways Company of Ireland invites tenders, receivable by May 30, for stores, including steel castings, plates, springs, tubes, tyres and axles, for the twelve months commencing July 1, 1934.

The Chinese Government Purchasing Commission invites tenders from British manufacturers for approximately 9,600 tons of steel plates, bars and sections. Messrs. Fox and Mayo, 155, Dashwood House, Old Broad Street, London, E.C.2, are the consulting engineers.

The South African Railways and Harbours Administration is calling for tenders, to be presented in Johannesburg by June 4, for the supply of steelwork for bridges on the De Aar-Kimberley and Rosmead-Stormberg sections. Firms desirous of offering steelwork of United Kingdom manufacture can obtain the further details from the Department of Overseas Trade.

POWER-DRIVEN DERRICK CRANES.—A revision of the British Standard Specifications for derrick cranes has now been completed by the issue of the British Standard Specification for Power-driven Derrick cranes (No. 327, Pt. 1—1934). Copies can be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. 2d. post free.

STATION CINEMA FOR COPENHAGEN.—At Copenhagen Central station a cinema is shortly to be opened. At this theatre news films will be shown, and also a special State Railways publicity film. Another film, taken during the construction of the Lillebelt bridge will also be exhibited. The admission fee will be very low so as to induce people waiting for trains to spend the time as pleasantly as possible. The system of providing entertainment for railway travellers has already been successfully tried in this country by the Southern Railway. A news theatre was opened last year at Victoria station and a similar enterprise has just been inaugurated at Waterloo.

CANADIAN RAILWAY ABOLISHES A LA CARTE MEALS.—A la carte meals, so long a feature of Canadian railway travel, disappear this month from the dining cars of Canadian National Railways transcontinental trains. Instead, passengers will have a choice of fixed meals. Breakfasts will range from 1s. 6d. to 4s., luncheons from 2s. to 4s., and dinners from 3s. 6d. to 6s. Under the new system it will be possible to serve more customers and reduce overhead costs. The menus have been selected from the suggestions of passengers, who were invited over a period to express their views. Special meals are offered to children under ten years of age at lower prices than those charged for adults.

Railway Share Market

The stock and share markets have displayed unexpected activity and firmness for the pre-holiday week of a twenty-one day account. Home railway stocks have made a recovery in public interest, which is unusual just before a holiday to which no particular traffic interest attaches. It is suggested, however, in the Stock Exchange that Whitsuntide traffic receipts this year will be particularly good and compare favourably with any corresponding week for the last four years.

This view appears to be based on the recent trend downward in unemployed figures and the inference that a much larger number of workers will be able to afford a first holiday for their families which was not possible six weeks ago at Easter. The Board of Trade figures for the past month were also very encouraging. In any case, the market reports a much larger number of inquiries from investors, and the question of the wages discussion which was said to be holding up an advance in the market, has now been relegated to the background. Every ordinary stock established an advance early this week. Southern preferred ordinary, which had suffered from small realisations recently, jumped two points on Tuesday. There is no change in the home railway outlook, but there has been a greater disposition to buy stock, and dealers in the home railway market have been caught, not for the first time, short of stock. It is necessary to emphasise that until Stock Exchange dealers carry a larger amount of stock on their books which would enable them to make closer prices to both buyers and sellers, there is little hope of home railway securities recovering the great popularity they formerly had among investors. The speculative investor is not prepared to do business in a market where he loses a large part of the capital value of a stock immediately he makes an effective purchase. The difference between buying and selling quotations is equivalent to this big difference. It may amount to less in the case of a small amount of ordinary stock, but when brokerage, transfer stamps, etc., are taken into account, the business becomes so expensive that the speculative investor prefers other markets.

Foreign railway stocks have shown little change, and the trend was almost wholly downwards throughout the week. Taltal ordinary shares were an exception and marked a rise of 1s. 3d. per £5 share. In all Argentine stocks the market was very weak, and some of the Central Argentine preference and debenture stocks, of which a small amount was pressed for sale, were marked down a point or more against sellers. Brazilian railway stocks were lower, and there was a drop of two points in the official quotation for La Guaira and Caracas ordinary to 7-10.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1933–34	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1933	No. of Week	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1933	Prices: Lowest 1933	Prices: May 16, 1934	Prices: Yield % (See Note)
				£	£		£	£	£					
South & Central America.	Antofagasta (Chili) & Bolivia	830	13 5.34	12,690	+ 1,820	19	242,890	182,730	+ 60,160	Ord. Stk.	26	11¾	20	Nil
	Argentine North Eastern	753	12 5.34	10,700	— 200	45	464,100	482,100	— 18,000	,,	14½	5	8⅛	Nil
	Argentine Transandine	111	—	—	—	—	—	—	—	A. Deb.	55	40	50	8
	Bolivar	170	Apl., 1934	6,400	— 550	17	27,050	30,800	— 3,750	6 p.c. Db.	10	5	10	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	15	11	13	37/8
	Buenos Ayres & Pacific	2,806	12.5.34	137,000	+ 12,000	45	4,977,000	5,012,000	— 35,000	Ord. Stk.	26	9⅞16	11	Nil
	Buenos Ayres Central	190	6.5.34	$99,500	— $17,400	45	$4,792,953	$4,664,339	+ $128,614	Mt. Db.	30	10	23	Nil
	Buenos Ayres Gt. Southern	5,085	12.5.34	201,000	— 27,000	45	9,113,000	9,231,000	— 118,000	Ord. Stk.	44½	21½	26	Nil
	Buenos Ayres Western	1,926	12.5.34	80 000	—	45	3,075,000	3,067,000	+ 8,000	,,	34½	15¾	20½	Nil
	Central Argentine	3,700	12.5.34	‡192,000	+ 2,000	45	7,523,000	8,161,000	— 638,000	,,	28½	15	16	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	18	10	10½	Nil
	Cent. Uruguay of M. Video	273	12.5.34	15,725	+ 455	45	740,144	683,668	+ 56,476	Ord. Stk.	20	8	14	Nil
	Do. Eastern Extn.	311	12.5.34	3,896	+ 645	45	153,573	147,613	+ 5,960	—	—	—	—	—
	Do. Northern Extn.	185	12.5.34	2 367	+ 82	45	85,530	88,023	— 2,498	—	—	—	—	—
	Do. Western Extn.	211	12.5.34	1,056	— 8	45	71,205	59,756	+ 11.449	—	—	—	—	—
	Cordoba Central	1,218	12.5.34	40,000	+ 2,000	45	1,831,000	1,800,000	+ 31.000	Ord. Inc.	9¼	2½	5	Nil
	Costa Rica	188	Feb., 1934	16.729	— 1,400	35	145,713	157,900	— 12,187	Stk.	29	20	26½	7⁹⁄16
	Dorada	70	Apl., 1934	9,600	+ 2,800	17	41.100	26.400	+ 14.700	1 Mt. Db.	76½	68¾	95	6⁸⁄16
	Entre Rios	810	12.5.34	14,600	+ 1,300	45	692,600	671,800	+ 20.800	Ord. Stk.	26½	9	14½	Nil
	Great Western of Brazil	1,082	12 5.34	4,700*	— 2,300	19	167,400	230,900	— 63,500	Ord. Sh.	23/6	½	5/8	Nil
	International of Cl. Amer.	794	Mar., 1934	$552.711	+ $61,146	13	$1,523,085	$1,356,820	+ $166 265	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	1½	1⅛16	1⅛	Nil
	La Guaira & Caracas	22⅝	Apl., 1934	3,965	— 1,910	17	15,245	27,240	— 11,995	Stk.	16	10	8½	Nil
	Leopoldina	1,918	12.5.34	18,141	— 1,297	19	416,284	447,286	— 31,002	Ord. Stk.	20¼	10	10	Nil
	Mexican	483	7.5.34	$180,600	+ $18,600	18	$4,180,100	$3,344,900	+ $835.200	,,	3	½	2½	Nil
	Midland of Uruguay	319	Apl., 1934	7.592	— 713	43	95,108	85,366	+ 9,742	Ord. Stk.	2	1	1½	Nil
	Nitrate	411	30.4.34	6,367	+ 1,638	17	104.983	34,640	+ 70.343	Ord. Sh.	78/6	11/16	3/8	Nil
	Paraguay Central	274	5.5.34	5.100	+ 1,440	44	147,590	122.490	+ 25,100	Pr. Li. Stk.	72	49½	72	8⁵⁄16
	Peruvian Corporation	1,059	Apl., 1934	49.967	+ 6,193	43	556.896	529,310	+ 27,586	Pref.	15¼	5	12	Nil
	Salvador	100	12 5.34	1,822	+ 231	46	68.969	129,054	— 60,085	Pr. Li. Db.	70	66½	70	7⅛
	San Paulo	153½	6.5.34	31,065	+ 5,982	18	541,996	541,296	+ 700	Ord. Stk.	102	68	82	2⁷⁄16
	Taltal	164	Apl., 1934	4.155	+ 1,965	43	60,935	36,175	+ 24,760	Ord. Sh.	1¾	¾	1⅛16	5½
	United of Havana	1,365	12.5.34	18,956	+ 238	45	873.296	874,642	— 1,346	Ord. Stk.	8	2	5	Nil
	Uruguay Northern	73	Apl., 1934	961	+ 61	43	11,507	14,593	— 3,086	Deb. Stk.	6	3½	5	Nil
Canada.	Canadian National	23,750	7 5.34	658,186	+ 134,618	18	10,820,875	8,861,255	+ 1,959,620	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	—4 p.c.	Perp. Dbs.	60½	38	68	5/8
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	99¾	85	100½	4
	Canadian Pacific	17,018	7.5.34	449,800	+ 41,600	18	7,799,200	6,707,200	+ 1,092.000	Ord. Stk.	22⅛	11	16	Nil
India.†	Assam Bengal	1,329	14.4.34	29,940	+ 9,693	2	60,322	40,714	+ 19,608	Ord. Stk.	79	70	79½	3¾
	Barsi Light	202	21.4.34	2.782	+ 142	3	7,845	10,567	— 2,722	Ord. Sh.	101¾	70	100½	6
	Bengal & North Western	2,113	21.4.34	51.335	— 2,226	3	155.974	152,498	+ 3.476	Ord. Stk.	292	240	280	5¹¹⁄16
	Bengal Dooars & Extension	161	21.4.34	2.107	+ 27	3	6,396	6.082	+ 314	,,	127	119	125	5⅝
	Bengal-Nagpur	3,269	14.4.34	113.925	+ 13,287	2	230,175	196,076	+ 34,099	,,	97¼	83½	101½	3¹⁵⁄16
	Bombay, Baroda & Cl. India	3,089	5 5.34	173,025	+ 3,750	5	827,400	829.575	— 2,175	,,	112	107	111½	5⅜
	Madras & South'n Mahratta	3,230	21.4.34	120,525	+ 12,255	3	354,225	328 339	+ 25,886	,,	127	114¼	126½	7⅛
	Rohilkund & Kumaon	572	21.4.34	12,135	+ 259	3	37.713	38,399	— 686	,,	260	225	253	5¹⁵⁄16
	South India	2,526	21.4.34	81,116	+ 5,226	3	235,399	231,019	+ 4,380	,,	119½	112	117½	6¹³⁄16
Various.	Beira-Umtali	204	Mar., 1934	49 507	+ 6.256	26	290,974	234,727	+ 56,247	—	—	—	—	—
	Bilbao River & Cantabrian	15	Apl., 1934	1,787	+ 232	17	7,749	5,087	+ 2,662	—	—	—	—	—
	Egyptian Delta	621	30.4.34	4.936	+ 96	4	15,611	15,999	— 388	Prf. Sh.	1³¹⁄32	1¾	2	Nil
	Great Southern of Spain	104	5.5.34	2,287	+ 547	18	39,376	38.665	+ 711	Inc. Deb.	4	3	5½	Nil
	Kenya & Uganda	1,625	Jan., 1934	34 690	+ 5 462	4	34,690	29,228	+ 5,462	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	53	33½	44½	7⅛
	Mashonaland	913	Mar., 1934	88.871	+ 21,868	26	530.604	362,535	+ 168,069	1 Mg. Db.	91¾	42	94	5⁵⁄16
	Midland of W. Australia	277	Feb., 1934	12 965	+ 445	34	108.714	104,268	+ 4,446	Inc. Deb.	89	70	96½	4⅛
	Nigerian	1,903	31.3.34	33,887	+ 5,246	53	1,858.189	1,870.986	— 12,797	—	—	—	—	—
	Rhodesia	1,538	Mar., 1934	154,590	+ 28.180	26	909,844	658.388	+ 251,456	4 p.c. Db.	98½	80⅝4	100§	4
	South African	13.180	14.4.34	487,067	+ 93,412	2	917,641	820,037	+ 97,604	—	—	—	—	—
	Victorian	6,172	Feb., 1934	735.677	— 53.515	34	5,849,572	6,175,377	— 325,805	—	—	—	—	—
	Zafra & Huelva	112	Mar., 1934	11,420	+ 994	13	34,675	31,396	+ 3,279	—	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1/16.

* Traffic affected by rain. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. ‡ Average rate of exchange for the week :—This year 31⅛. Last year 41⁹⁄16.

Note)